THE VETERINARY RECORD

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I.—A HUNDRED YEARS

1844-1944

THE centenary of the grant of the Charter of Incorporation which raised the body of men practising the art and science of veterinary medicine and surgery in Great Britain and Ireland to the dignity of a profession fell within a period when the world was in turmoil. Times, it was declared, were unpropitious for the celebrations that otherwise by now duly would have taken place. The Council of the Royal College of Veterinary Surgeons had formally decided to postpone their celebrations.

The National Veterinary Medical Association of Great Britain and Ireland, as a live organisation acutely conscious of the high destiny which the calling of Veterinary Surgeon has come to fulfil in the service of the public, nevertheless conceived that nothing ought to deter it, however fragmentary and incomplete the manner in which it could do justice to the occasion with the resources at command, from placing on record a little of which there is in the past history and present achievement of the profession such great abundance to inspire its members to a sense of that high destiny.

Acting through the editorial committee of its official journal, *The Veterinary Record*, the current issue is therefore presented to its readers. The special issue departs in many respects from the more customary form of a handbook published at a centenary celebration. It does not pretend to offer a smooth and authoritative account of the growth of the profession since the original Charter. Even as a summary it is very incomplete, and it has unfortunately not been possible to embrace some important sections of the profession's activities. The space allocated to these various activities again, it will be evident at once, is disproportionate. The literary and other standards are uneven.

Conscious of all these and many other imperfections, as time went on it became more and more clear to those who were entrusted with the preparation of the issue that the best traditions of the *Record* as laid down by its founder, William Hunting, would be most fittingly observed by publishing almost as they stood the narratives received from the men and women selected to write direct from an experience which was their own and was garnered in the course of very busy lives in the diverse activities of the profession. The duly recorded impressions of such men and women, it need hardly be said, are far more likely to bring home to the ordinary reader a vivid mirroring of the life of the profession as it is really lived after a centenary of development than any well-assorted compendium composed by someone who may not be—and, indeed, cannot be—conversant with those many activities from intimate experience.

Even at the risk of inviting rebuke on the scores of overlapping and redundancy of description, the narratives received are published with very little alteration. It will be to the reader's good sense and discrimination that we shall appeal to supplement the admitted deficiencies of our method.

To the many busy men and women, engaged in the different activities, of very different lengths of experience, practising their art and science in widely differing conditions of environment, and consequently endowed with widely diverging outlooks on many problems—to all we express our gratitude. Their response was prompt and generous. Their names, as is fitting is an issue of this kind, remain anonymous, but nevertheless well minuted in our records.

It is, therefore, with the hope that we have not entirely failed in our duty, as we conceived it, that we launch this issue. To repeat the paraphrase of the motto of one of our youngest and most vigorous affiliated Societies (the South African Veterinary Medical Association), it has been our aim: "To search the past for what is good and beautiful and thereon build our future." In that way we may do something towards achieving our next College centenary—let us hope, for our successors' sake, in a more tranquil world—still in the glorious strength of *Vis unita fortior*, our own College motto.

[Practically the whole text of this issue was ready for publication one year ago, but production has been delayed on account of difficulties connected with printing and the paper shortage.]

XUM

a.—A Short History of the Veterinary Art in Antiquity

"The Veterinary Art," says the Register of Veterinary Surgeons, in its opening words in an Historical Preface, "is of great antiquity."

Its antiquity is very great when measured by the standards of the historian, for among the earliest writings known there are references to man's ministrations to the ailments of animals. The Kahun papyrus, which dates back to about the end of the third millennium B.C., prescribes remedies for certain ill-defined ailments of dogs and oxen. We know, moreover, from archaeological evidence that these species had already been maintained in an advanced state of domestication by the ancient Egyptians for about three millenniums before that time. Indeed we are told that soon after the first human social groups became settled in the Nile Valley with their discovery of wild barley growing there, they began to domesticate various animals, such as buffaloes, antelopes, gazelles, perhaps asses, as well as geese, ducks, and pigeons. Within two millenniums from that early settlement, civilisation, having reached by then an advanced state, oxen and asses were used extensively for cultivation and transport, and flocks of goats and sheep grazed near the villages. Sheep began to be kept under domestication about the early part of the third millennium, and displaced the gazelles and antelopes. The horse, however, does not seem to have been favoured till much later, first coming into use on a large scale during the seventh century B.C. for use almost exclusively in warfare as cavalry, this use being probably made originally in Assyria. This was an innovation destined to have a profound effect on human history until the early 20th century A.D. Ancient Egypt was a land of medical specialists, the medical art being practised even by some of her rulers. From the pottery inscriptions discovered, castration and amputation and training of the horns of cattle were commonly practised, and much attention was paid to parturition as well as to proper milking of cows. The Biblical story tells us of the plagues which sometimes afflicted these cattle and of their leanness during periods of scarcity.

Recent research has shown that the domestication of animals and the arts which grew around it, were not confined to Egypt during this long period, while Europe remained until about the eighth to the tenth century B.C., still in the late Stone (or Neolithic) Age. Within the great centres of early civilisation extending eastwards from Egypt throughout Asia we now have evidence that they were advancing in these arts, often to a degree that does not seem to have been reached in Egypt. In the rich successive Assyrian or Babylonian civilisations, cattle and asses were highly prized, and sheep, it seems, developed around them a priesthood which divined the future from the appearances of the liver. The great Semite king of Babylon, Hammurabi (about 2100 B.C.), whose codification of the laws of his country is said to be one of the greatest triumphs of the human mind, included in them a system of veterinary jurisprudence which has hardly been surpassed to this day. The work of the archaeologist Marshall has shown that the wealthy civilisations which developed meanwhile in the Indus valley, with their invention of ox-drawn wheeled vehicles, were almost more advanced in most respects in their culture than the Indian peasant was before the British occupation. Indeed, long before the advent of the British, and to a degree that was hardly to be suspected, the veterinary art, we now learn, had reached a high pitch in India, as is evident from the Sanscrit manuscripts still extant*. "The later Pandits who wrote Sanscrit were mostly hermits, yearning for a hereafter, having little care for the affairs of this world, or priests engaged in ritual duties. To them the characteristics and diseases of horses offered no attraction . . . . This was not the case in ancient times when Brahmins and scholars were kings and ministers, and the horse was looked upon as a vitally important element in the kingdom. Then, as a literary nation, the Hindus wrote works on that subject, as on all other subjects which engaged their attention. When the first attempt was made systematically to study the veterinary art, it is not easy to determine, but there was every reason to suppose that it dated from a remote period of antiquity, when medicine for human ailments first attracted attention." Hindu and Greek mythology both have the same legend about the origin of the healing art. The well-known Greek one about Chiron, half man, half horse, because he was born from the womb of a mare, has its counterpart in the Vedas story about the twin brothers, the Asvins, who were also born of a mare, and became surgeons of the gods. Chiron, the Centaur, said to have flourished about 1300 B.C., taught his art to his adopted son, Aesculapius. The Asvins likewise taught their art to various sages. How it was handed down has not been explained by tradition, but that devoted to cattle became expounded by a great figure, Pálakápya and that devoted to horses by an equally learned writer and teacher, Sálihotra. The name of the latter still survives in the form familiar to British residents in India as *salutri*, which is the descriptive title of the indigenous animal practitioner.

The German veterinary historian, Froehner, believes, however, that the name *Salihotra*, which occurs so frequently in the ancient Sanscrit texts, does not refer to a historic personage, but has been throughout a descriptive title. The point is rather difficult to decide but is an important one. F. Smith came to the conclusion from the merits of his writings that Apsyrtus, the Byzantine hippiatrist, who flourished in the fourth century A.D., must be credited with the title of "father of the veterinary art of the present day." From the wisdom of his precepts as they have come down to us, that title may well have been merited by the great Indian sage, *Sálihotra*, who lived several centuries earlier. In the ancient Hindu veterinary art, the elephant claimed a large share of attention, and A. K. Iyer has given us a translation of a remarkable clinical account of what was perhaps tuberculosis in this animal.

Something similar which caused the learned in these civilisations to turn their minds away, or upwards, as they thought, from progressive study of this kind seems to have occurred at about the same time: "It was unfortunate that the Brahmins fancied that wisdom was something superior to the offices of the world, and was to be sought for in abstraction, and subtle distinctions. Instead of seeking to correct the passions and sensual inclinations of mankind, they endeavoured to reduce the condition of humanity to its feeblest and most limited state. Thus it was that the Brahmins neither embellished life nor purified the mind." *

The reforming movement, Buddhism, which derived from the teachings of the saintly Sakya Memi, and rapidly gained sway throughout India and most of Asia in the third century B.C., taught benevolence and mercy towards suffering in both man and all other animals. Shortly after the invasion of India by Alexander the Great, the great King Asoka, the grandson of Chandragupta, who had embraced this faith, continued to extend the system of rendering veterinary aid towards animals. "Veterinary science reached a high degree of development. Horses, elephants, cows, fish, game birds, etc., received veterinary aid . . . the superintendent of horses became a high officer of the Buddhist state. . . Our modern system of bird and animal sanctuaries was forestalled and whole tracts were devoted to their preservation and care. Regulations were laid down dealing with the minutest details of the proper ration to be given to different animals at different ages, both in sickness and in health, and over their ailments was lavished a care which may well serve as an example to the modern veterinarians." India, at this time, it has been said, was "veritably an 'apotheosis' of the animal world." Hundreds of veterinary hospitals, managed and staffed by state veterinarians, were set up all over India. Traces of these still remain. The Buddhist faith, however, seems to have eschewed surgical interventions. Gradually, however, after several centuries, this wonderful system of benevolence towards animals vanished with the ousting of Buddhism again by Hinduism. It survived in a corrupt and perverted form in the practices of a remaining offshoot, the Jains, who still provide the upkeep of animal asylums (*pinjra poles*) to conform with their tenets.

Of these ancient civilisations the Chinese has survived to the present day, and we have records of it purporting to go back to 2953 B.C., though reliable history does not go farther back than the middle of the Chou dynasty, that is, about 722 B.C. This was one of the most glorious periods of Chinese history, and "literature, art, philosophy, religion, government and all that is included in the term civilisation flourished and reached a high degree of development. . . . Never before or since had so many men of genius appeared in the same narrow limits of space and time." These included the three greatest characters of China—Lao Tzu, Confucius, and Mencius, who wrote on all kinds of subjects and whose influence was so great that it was felt in every branch of literature. The effect of the philosophic and aesthetic teachings of these great philosophers, however, upon medicine seems to have been pernicious, as it was to be later in the great days of Greek culture in the fourth century, B.C., under the influence of Socrates and Plato. "Wisdom," rather than "knowledge" was contended to be the mainspring of human happiness, and society was to be organised so as to be governed by scholar-administrators, selected by competitive examination early in life, while the rest of the population were to remain content

* See Mitrá, R. (1885), Ancient Hindu Veterinary Art. *Proc. Asiatic Soc. Bengal*, p. 91 (July), Iyer, A. K. (1937), Veterinary Science in India, Ancient and Modern, with special reference to tuberculosis. *Agric. and Live Stock in India*, 7, 718.

* Review of the History of Medicine. By Thos. A. Wise, M.D. Vol. I, p. 87.

—as indeed in China they did remain as nowhere else content—with their lot as craftsmen. The crafts, as we well know, developed through the skill of satisfied work, but "progress" as we now know it in the West came to a standstill. However, psychiatric derangements are said to be far less prevalent in consequence. "Thus we find medicine no longer an effective, practical, although restricted art, based upon observation and knowledge. We see rather, masquerading under its name, pretentious systems of healing carried to an absurd, extravagant extent; elaborate systems of theoretical knowledge, which, ever developing in complexity without gaining in meaning, have tended to become less and less effective in practice. The study of medicine was dominated by the scholastic subtleties of visionary philosophers and was characterised by reverence for authority, petrified formalism, and pedantic excess of detail."* Before that decline, Chinese medicine had attained a high degree of development during the middle of the Chou dynasty (1121-249 B.C.), especially in the matter of the medical organisation, hygiene, and public health. "The Chou Rituals distinguished four kinds of doctors, namely, physicians, surgeons, dietitians, and veterinary surgeons." "Their duties were well defined. The physicians treated internal complaints only, *i.e.*, medical cases; the surgeons attended to external diseases, such as wounds, fractures, ulcers, etc.; the dietitians looked after food and drink; and the veterinary surgeons took care of the illness of animals." The progress made by Chinese medicine before the decline is reflected in the following quotations from their writings: "In the opinion of Wen-Ching-tzu the able doctor first attends to sleep and diet before resorting to drugs." "Do not take any medicine if there is nothing wrong, for it is only useful for curing disease" (Shen Chien). "The sage does not treat those who are ill but those who are well". (Su Wen). "The good physician first cures the disease of the nation, then human ailments." "The superior man does not in his food seek to gratify his appetite, nor in his dwelling place does he seek the appliance of ease" (The Analects).

A Chinese medical department or "unit" at this time was well organised. The superintendent's office contained two high grade and four lower grade doctors, two registrars, two clerks, and twenty servants. In the department of dietetics there were two middle grade doctors, and in the medical department there were eight middle grade doctors. There were eight lower grade doctors in the surgical department, and four lower grade doctors in the department of veterinary medicine. Veterinary surgeons treated the ailments and wounds of animals. The Chinese seem to have been the first to admit practitioners of these arts to their calling by a State examination.

As in other countries, including this country until the early part of the last century, surgeons were classified on an inferior plane to physicians. It is significant to note the position given to the department of dietetics which in order of priority preceded even that of medicine.

Among the Hebrews, the art did not reach a high level, though there are frequent references in the Old Testament to animals and their diseases.† The priest undertook to inspect animals before slaughter, especially before sacrificial rites, and to this day his functions have conformed to those prevailing in the Eastern civilisations where human and animal ministration had not become sharply separated.

In the most primitive societies generally we learn from the researches of anthropologists and mythologists, the duties of priest, lawyer, and physician seem to have been combined in one man within a tribe. With progressive social development, these duties tend to become more or less separated in the hands of different specialists. They tend again to coalesce with regression, as during the long period of the Dark Ages in Western Europe, but the separation tends to be incomplete and disappear under mental depression. The surgeons who were manipulators arose from the craftsmen and were considered therefore on an inferior plane. The phenomenon, as we shall have occasion to say again later, was apparent right up to the time of the founding of the veterinary schools in the latter part of the 18th century.

The Indo-European races of Europe which appeared on the scene towards the middle of the second millennium B.C. overthrew in time the brilliant civilisations of Western Asia and Northern Africa, but came to absorb much of their culture. Little is known about the veterinary art among them, except that the horse became paramount with them for warlike purposes and they were well versed in castration. The migration and mingling found a favoured spot in Greece for amalgamation of the best virtues, and with the appearance of Hippocrates (470-356 B.C.), "the father of human medicine," all that was best in the legacy left by the older civilisation was sifted out and combined with "common sense," acute powers of observation and discarding of superstition. Nothing seems to have been saved, however, of the writings of the veterinarians of his time, though there is some reason to think from the writings of a few like Simon of Athens and Mago of Carthage that some existed.

Leclainche has brought out very clearly the effects upon the whole course of veterinary medicine of what occurred at this stage in history. Unlike his countryman Aristotle (384-322 B.C.), who continued and improved upon the earlier Greek tradition, Hippocrates compromised with the philosophic teachings of his contemporaries Socrates and Plato, who, in a manner similar to the great Chinese philosophers, prescribed an exalted aesthetic and moral code for their people. In their system, however, the human personality was speculatively endowed, for the first time, in compelling philosophic language, with a state of mind, a "soul," on a higher plane than that of his fellow animals. Hence, Hippocrates decided against the inclusion of animal ailments in his doctrines. When comparisons were made to him between luxations in man and the ox, he scorned discussion of the topic.

The Platonian doctrine, however, did not gain strong hold in Greece itself and might have lapsed in time. For the veterinary art came to be practised there by a body of men who were also often trained in human medicine and were held high in social esteem. The art seems to have flourished to the highest pitch about the fourth century A.D. in this territory, which had been now brought under the domination of Rome, and was governed separately as the Eastern Roman, or Byzantine empire. Several centuries later, by order of the Emperor Constantine Porphyrogenitus, the fragments of the writings of the most distinguished men of that brilliant period were brought together in a work entitled the Hippiatrika. Copies of this work had already been made by the Arabs and several made their way into Western Europe after the fall of Constantinople to the Turks. It was then published to the world by order of the Francis I., King of France, in 1530. The work of the Hippiatrists, it is now seen, had been freely plagiarised by the Roman writer, Vegetius (A.D. 450-510), whose great work, *Ars veterinariae sive digestorum mulomedicinae libri* long held him entitled to be called "father of the veterinary art." The authors comprised a galaxy of about seventeen veterinary writers—Apsyrtus, Hierocles, Theomnestus, Pelagonius, and others, the most prolific and soundest of them being Apsyrtus, born in Prusa, opposite to Asia Minor, somewhere between A.D. 330 and 340. What characterised these writers at their best was their powers of observation and freedom from superstition. The late Sir Fred Smith classed Apsyrtus as "the father of the veterinary art." In contrast, the Byzantine period proved a blank period in human medicine (Osler) tending to show that the veterinary art can flourish independently of human medicine, for about 800 years separated Hippocrates and Apsyrtus. After the death of Alexander (303 B.C.) Egypt fell to his famous general, Ptolemy, and at the new centre of Greek learning at Alexandria, for a time the teaching of anatomy was developed as never before. Galen (A.D. 131-200) of Pergamos, inspired largely by that school "united in himself as never—and, indeed, one may say, never since—the treble combination of observer, experimenter, and philosopher" (Osler). The veterinary art did not develop to any high standing within the Roman Empire. The word "veterinary" seems to have been used there to refer to a class of menials employed to look after the older or draught oxen, more dignified terms being applied to the "healers" of the various classes of animals.

With the fall of Rome (A.D. 416) and the decay of the Western Roman Empire, and the spread of power wielded tyrannously by a theurgical hierarchy upon the organisation bequeathed by it, the regression in civilisation which marked the Dark Ages set in. To safeguard its power by enhancing the supremacy of its doctrine, "brutes" were denied succour from the priest-physicians of the Church, and the veterinary art became a despised and ostracised calling.

Meanwhile, the veterinary art prospered in the Arab Empire, for the doctrines of Islam did not ostracise it but held it in high honour. To the Arab his horse was a thing of beauty worthy of his devotion and transcending that of mere utility as were his women. The art was taught at the great medical schools of the universities side by side with human medicine from Persia to Spain. Even after the gradual expulsion of the Moors from Spain, the Catholic monarchs, in the days of Spain's greatness, extended their patronage to the corporate body which comprised the qualified practitioners of the art (the Albeiteras). The finest organised veterinary profession which the world had seen until then was

* History of Chinese Medicine (1932). By K. C. Wong and L. T. Wu. (Tientsin Press, Ltd., China.)

† See Froehner, R. (1934). Zur Kenntnis der Tierkrankheiten in alten Morgenlade. *Deuts. tier. Wschr.* 42. 558.

eventually shattered when the Cortes, in a mood of excessive liberalism, decided to abolish all corporations in 1813.

The Celts even before the Roman occupation appear to have been well advanced in some of the civilised arts. The code of Hywel the Good, King of Gwent (present South Wales and Monmouthshire), last published in A.D. 940, defines the conditions of sale and purchase of animals, and the penalties incurred for causing the death of an animal after treatment. According to Smith, the Celts betray in their history a greater affection for and judgment of animals than the Teuton races, who excel, on the other hand, as husbandmen.

Guilds of men trained by apprenticeship in the art had appeared in Germany and England about the 14th century, but afterwards the treatment of animals was relegated to the basest and most brutal classes. Before the founding of the schools, at the close of the 18th century, the most fortunate animals, according to M'Fadyean, were those which escaped treatment and animal plagues raged to about the same extent as if the present corps of qualified veterinary surgeons were banished from the country. Among a few families, in England as on the Continent, a tradition of high competence and integrity, was, however, bequeathed from father to son, and this inherited tradition served, as we shall see later, to form the nucleus of our professional system when the schools had failed to achieve it.

This brief narrative may seem impressive as giving proof of the great antiquity of the veterinary art, but it can be regarded truly as such only from the standpoint of the historian. In truth from the standpoint of the biologist the story presented is a very recent one: it is as recent as Man himself.

"Life on this planet began about 1,200 million years ago. Up to about 500 million years ago there were only invertebraes. Vertebrates appeared about 480 million years ago, the first land living forms about 350 million years ago, the mammals about 160 million years ago. *Homo sapiens* (wise man) appeared about 25,000 years ago, and we have something of a historical record of his doings for about 5,000 years.

"In a ridiculously short span of time man has made tremendous strides forward. . . . Present man is probably very different intellectually, morally, and spiritually from his forbears of 50,000 years ago. In a few hundred years recent man has come largely to understand and to be master of his natural world. True, the much more difficult task of becoming master of himself yet remains. . . ."*

It has been suggested that the important factor in man's evolution may have been a period of desiccation which ended a long forest régime, and compelled our arboreal ancestor to become at last wholly terrestrial. There his tactile proclivities had full scope in making "eoliths," a pastime which ultimately secured his survival and *pari passu* developed his intellectual power. . . . The value of the study of tools is therefore evident and tools logically include the aeroplane as well as the axe."† A new method of study, of studying history rather than by placing ultimate faith in written records has therefore grown apace in the last few years, namely that of the archaeologist. To illustrate our meaning we may quote a short passage from a book recording the progress made in studying this kind of history almost at our own doorsteps as it were since the period of the last war.‡ Describing the result of excavating a bed of alluvial earth known as Grimes Graves, near Weeting, in Norfolk, the authors say they found at the bottom a Levallois type of industry, accompanied by pottery, naturalistic engravings in flint crust and a fauna showing red deer and horse only. Above this was a middle floor containing a barbed arrowhead and a very fine unpolished flint axe and yielding *Bos longifrons*, red deer and wild boar. Above this again was a still later layer accompanied by these same animals, and, in addition, sheep, goat, dog, roe, and fallow deer.

What all that means in depicting man's own story and his close dependence upon animals from the time he only hunted them to the time when he had domesticated a variety of them can be left to the reader to estimate..

It needs no great effort of imagination to perceive that in all these successive readjustments the need for the exercise of the veterinary art would be growing ever closer. Indeed, it is not unlikely, as has been said, that primitive man learned much about the healing art from the animals themselves.

Having learned the use of "tools," and thus able to fall upon other animals for food and clothing, not only for his normal needs but also during the periods of great stress upon his constitution represented by the successive Ice Ages, man would therefore be able rapidly to outpace those other animals by restricting development to his intellectual faculties. Yet all the while he depended on them, in the ecological sense. Progress in the pursuit of knowledge, however, has been slow and fitful and when it has occurred it has come largely from some accidental discovery made in conflict with the ordinary processes of his own mind. For example, it took several thousand years for him to realise, it has been found, that his happiness and ends were much better served by spreading the dung of an ox upon a field than by shedding its blood upon an altar.

The great question which now arises is whether the departure from this close dependence during the last few generations has been too drastic. Again, many thoughts will be aroused in the mind of the veterinarian. Paramount among these will be the question whether or not much of what the veterinarian sees in the course of his daily life is in the nature of a reversion—perhaps sometimes a little perverted, but nevertheless a reversion—which has its roots buried deep in human history. It is largely for this reason that we have thought fit to publish on this occasion the different impression of several practitioners conveyed in their own words. The discerning public will, therefore, we hope, not fail to understand our meaning when we say, as we have said, that the veterinary art is somehow inseparably allied in its destiny with *progress* in human social evolution.

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b.—A Short Account of the Circumstances which led to the Petition for and the Grant in 1844 of the Charter of Incorporation of the Royal College of Veterinary Surgeons

(i) "*T. W. Mayer* (1814-1887), *of Newcastle-under-Lyme, whom we have mentioned as writing prophetically on Cattle Plague reaching this country, graduated in* 1835, *so that he was not a young man when he volunteered for service in the Crimea* (1854). *He did remarkable work in connection with the obtaining of our first Charter, which was the primary step towards the emancipation of the profession from the fetters with which Coleman* (1765-1839) *had bound it. He helped to finance the movement, and the money he freely gave would have helped him in his declining years. After the Crimean War he obtained a commission in the Royal Engineers, which he held until* 1870, *when he was retired for age. Always keen on Veterinary Medical Societies, he founded the Army Society at Aldershot in* 1861 *and was present at its resuscitation in* 1887, *in which year he died at Aldershot, aged* 73. *The veterinary profession has had none in its ranks who have had its advancement nearer to their hearts than T. W. Mayer.*" Sir Fred Smith (1927). *A History of the Royal Army Veterinary Corps.* (See also Smith's *Early History of Veterinary Literature*, Vol. 4, p. 52.)

(ii) "*Francis King, jun., of Stanmore, Middlesex, qualified in* 1825. *Able and bold practitioner, . . . who first in this country performed laparotomy in the horse to relieve obstruction. He was one of the Committee of Veterinary Surgeons who from* 1840 *onwards met to prepare the draft Charter of incorporation of the profession, and was Treasurer of the Fund (T. W. Mayer was its Secretary) . . .*" Sir Fred Smith (1933). *The Early History of Veterinary Literature*, Vol. 4, p. 24.

(iii) "*If, possibly, they who have long had everything their own way may have suffered abuses to creep in (and we all need an occasional hint to keep us to our duty), others have been as culpable in suffering those abuses to be established and to grow. . . . Angry discussion will rarely do good, and will often injure the best cause. On the patient accumulation of experiment and fact must our ultimate improvement be founded. . . .*" W. Youatt (1828) in an editorial article upon the state of veterinary education and the objects of *The Veterinarian* published in its first volume.

Writing in the third volume of his *Early History of Veterinary Literature and its British Development* upon the life of William Youatt (1776-1847), "a gentle, amiable man . . . whose name is written in letters of gold upon the tablets of his profession"—the late Sir Frederick Smith (1857-1929) says: "The story of the Charter deserves a volume to itself, for its inner history has never been set forth, though the matter is abundant. The early attacks by the reformers on the (Royal Veterinary) College (London) were failures; Coleman and his set were too powerful, but in due course right triumphed over might, and the profession was established as a body independent of the London school, though willing and anxious to co-operate with it for the public good. It has been necessary to introduce these subjects into the life of Youatt in order to understand something of his extraordinary activities. They did not end here. . . ."

Thanks largely to Sir Frederick Smith's own industry and scrupulous veracity as a historian and the methods of journalism adopted by Youatt in his conduct of *The Veterinarian* from 1828 onwards, the circumstances which led to the petitioning for the grant of the Charter in 1844 are perfectly plain to anybody who will take the trouble to unravel that episode in our history. It would, as Smith has rightly said, need a fairly considerable volume to do proper justice to it. In a short essay such as can be published in a commemorative issue of this kind, nothing more than

* Rice, V. A. (1942.) Breeding and improvement of farm animals. 3rd edition. (McGraw-Hill).

† Man and his Past (1921). By O. G. S. Crawford. (Humphrey Milford.)

‡ Archaeology in England and Wales. 1914-1931. (1932.) By T. D. Kendrick and C. F. C. Hawkes. (Methuen.)

a few of the salient points in that history can be shown up, and we are fully mindful that the compression risks distortion of the narrative. In the issue of *The Veterinary Record* published in 1938 to commemorate its Jubilee, touching then upon several incidents which led to the establishment of a British veterinary periodical literature, we had reason to dwell upon some important trends in the conduct of that literature which were destined to shape, and which indeed succeeded in shaping profoundly, the development of the British veterinary profession. There will be no need here, therefore, to pursue those trends anew.

After witnessing the unfolding of the evidence we cannot but come to the conclusion that Smith's verdict is a "true" one. Indeed his indefatigable questing for the facts leaves fairly bewildered an ordinary person far less endowed with an unresting spirit than he was.

We would be guilty of unwarranted concealment, however, if we did not inform the reader that another distinguished veterinary historian, to whose high authority respect has been paid in the foregoing section, has pronounced a different verdict. Writing upon the veterinary profession in Great Britain in his *History of Veterinary Medicine* (1936), Professor E. Leclainche says:—

"Towards 1825, writes Wilhelm Rieck (1926) (the distinguished German veterinary historian), London was a veterinarian's paradise. About 120 could be counted with large practices. Most of them owned a forge, infirmaries, and a druggist's shop open to all who wanted to buy. The most renowned were the Fields, whose business was founded by Moorcroft towards the close of the preceding century. After them came the Cherrys, Bracy Clark and his nephew Charles Clark, Sewell, Henderson, Turner, Hart, Rogers, Goodwin and others. Youatt was in partnership for nearly 30 years with Delabere Blaine, who specialised in small-animal work, and their reputation extended well beyond the capital. Like the London College, Youatt took on subscribers, really on contract terms, and these were then entitled to free treatment for their animals.

"Competition became very keen, on the one hand, between the College professors and the practitioners turned out after training and, on the other hand, among the practitioners themselves. Major-General F. Smith has left us an account of the bitter and fierce attacks directed against Coleman, the Principal of the College, a distinguished surgeon and perfect gentleman (*chirurgien distingué et parfait 'gentleman'*), but a mediocre veterinarian.

"The founding of the London College did not produce practitioners immediately who were very different from the usual 'farriers.' Even though recruitment gradually improved, the extreme lenience of the examining boards offered only relatively trivial guarantees. In spite of all that, a superior class (*'une élite'*) emerged which perceived the need for serious professional teaching. It was this movement which eventually succeeded in obtaining the Royal Charter of 1844, designating the College of veterinarians as a corporation and entrusting to the practitioners themselves the duty of issuing the professional diploma. . . ."

Below the remarks passed on Coleman, Leclainche prints a challenging and rather lengthy footnote, which, on this present occasion, however, needs be reproduced:—

"A strange resemblance can be detected between Coleman and Bourgelat (the founder, in 1762, of the French veterinary schools). As in the case of Bourgelat, Coleman, a surgeon and man of the world, and friend of Hunter and Astley Cooper, despised his pupils; it was his view that only farriers and grooms could follow the veterinarian's calling. It was a rabble system, wrote an old College student, speaking of his contemporaries. As in the case of Bourgelat, Coleman committed the blunder of confining himself to the horse only and, in spite of his medical education, he always remained a stranger to the affairs of veterinary practice. While Bourgelat had Lafosse as his detractor, Coleman found in Bracy Clark a ruthless enemy who tarnished his own good name by publishing a scandalous journal, the *Hippiatrist*—full of despicable calumnies. Lastly, as in the case of Bourgelat, Coleman had to protect his school against rival institutions: Spooner taught the anatomy 'of all animals' and Youatt opened a school 'for the study of the diseases of animals other than the horse.'

"It cannot be gainsaid, however, that Coleman left among the outstanding men in the medical world of his time the reputation of having a charming personality and of being a loyal companion and that the Royal Society of London, one of the most rigidly exclusive bodies in the world, enrolled him as a Fellow in 1831.

"We cannot accept on this point the judgment of Sir Frederick Smith. It seems to us that Coleman in spite of his unquestionable professional shortcomings and his no less unquestionable blunders rendered services to the London College and to British veterinary medicine that were distinguished and perhaps unrivalled" (*"des services éminents et peut-être inégalés"*).

About 40 years before the grant of the 1844 Charter an appeal was made for one and it was peremptorily refused. This is a cardinal point. We shall revert to that incident later.

What had happened between that time and the date of the grant eventually of a Charter was a change so great in the life of the whole community, and especially of the British community, that the personalities of individuals within the veterinary world loom small indeed when compared with the change that had taken place in the whole scene. The figure of Coleman, accurately portrayed though it was by Smith, must be seen in its natural setting to do justice to it and to our present theme. It is here we can discern the merits of Leclainche's method, even though his narrative flickers a good deal.

The circumstance that a great part of the world has now just been at war makes it the more easy to understand the nature of that great change in scene. Our present familiarity with the unusual conditions imposed on us by this last war enables us to appreciate that a reader of a professional journal of this kind perhaps a hundred years hence might not be easily impressed from its contents that events are now happening in the world which are shaping our professional destinies in several ways that are beyond our immediate control. Nobody again reading now, we are almost sure, the veterinary literature of the earlier part of the present, 20th, century would readily glean from it the extent to which ordinary veterinary practice became transformed and the stages through which the transformation took place, although that metamorphosis, if we may so call it, remains still most vivid in the memories of the older members of the profession now living. So that these precious memories are not lost to posterity we have felt it our duty to record them faithfully in the later part of this present number.

The modern veterinary era dates from the year 1764, when King Louis XV of France signed a decree in Council establishing the first veterinary school in the town of Lyons. Its establishment in that town was mainly due to the initiative of a young French squire of noble family, Bourgelat, who had studied law. His great interest in horses had already caused him to acquire the "*Académie d'équitation*"—a private institution in that town—as far back as 1740. To improve his knowledge he had, on the one hand, studied the best extant treatises on the care of horses such as those of the Duke of Newcastle and Solleysel, and, on the other hand, undertaken the study of the anatomy, physiology and diseases of horses under the guidance of two well-known Lyons surgeons.

It is vital at this stage to pause in the narrative. Otherwise, not only does the conflict in judgment between Smith and Leclainche remain unintelligible, but also, what is more important, what underlies that conflict in so far as it contributed, as it did fundamentally, to the subject of this essay—the grant of the Charter of 1844—will remain obscure.

In the state of society as it had become stabilised for centuries, horsemanship was a necessary part of the education of the class to which Bourgelat belonged, and on the continent of Europe there were the "*haute écoles*"—the riding academies*—to which those who were differentiated as "gentlemen" from the rest of society, the "vulgar," resorted to "finish" their education. Manners, though not necessarily morals, were patterned at these advanced establishments of social "culture," and the ritual that had reached its most exquisite refinement in them became the observance of the gatherings to which the class in which was vested privilege and power congregated, namely, the hunting field, the race-course, the showring and the sales-yard. It was this class who wielded power and exerted influence in the other assemblies such as Courts and Parliaments, which regulated society, and the pattern of manners entered there likewise for their mutual conduct and deliberation. In Europe, Hungary is probably the only important country in which that state of society has persisted to the present day. To a degree, therefore, that the cow had become the central factor of ritualistic observance in Hindu society, the horse had become established in "civilised" western Europe, by no means entirely for its utilitarian purposes, but as the animal around which those belonging to the grade of society possessing hereditary powers and privileges or those aspiring to enter within that grade—that of the "gentleman"—centred their observances.

We have already quoted Leclainche and made bold to enlarge upon some of his conclusions.[1] It is our present belief that through the evidence he gives of having read widely through the newer sciences of anthropology and mythology he was able to supplement the simpler history which has been so well traced for us by Smith, and to come to a different judgment, which is a more sympathetic one, on Coleman. Before the great social change took place which no one could have foreseen, Coleman did what he could and in his own way—but this had been until then the ordinary way—to uplift the position of those who were turned out as qualified to practise the veterinary art. But the uplifting was a *social* one—and even then, as is testified by the literature of the time, it was a perverted one, because the "rabble" he admitted into his college were hardly worthy of uplift. So long as they had a certificate on which were a number of signatures of successful Surgeons who were his friends, those pupils after they had paid him their fees could get into the Army, with commissioned rank, and they had become well enough known to be "accepted" as gentlemen. He could not, at that time, in his own mind, have done any more for

* Smith was evidently unable to bring his mind to think very highly of these establishments. In a highly appreciative note on Henry Herbert, tenth Earl of Pembroke (1734-94) in the second volume of his "*History of Veterinary Literature*" he writes: ". . . In the matter of equitation we must remember that Pembroke was trained in the High School of Horsemanship with all its pomp and foolishness. The training lasted for years and frequently left the horse's legs worn out. Pembroke, with his natural common sense, saw that however much the High School was worthy of praise as showing the degree of perfection which could be arrived at, for the soldier's horse it was not only unnecessary but undesirable." (p. 101.)

them. It did not matter about the course so long as they were given a few precepts that would not get them into trouble: the shorter the better. The horse was the animal, therefore, to which he confined his teaching all his life. When pressed to impart some teaching upon the other animals his advice to his pupils was that if they did not succeed in curing those animals the first time, they were but to go on trying and might succeed the next time. According to his standards it was not worth bothering more than that about those other animals. For many years afterwards, those who qualified from the French schools were denied commissioned rank, and had to serve under the regimental riding master. Living in a country where class distinction had exercised a tyranny greater even than in England we need not, therefore, be surprised at Leclainche when he asserts that Coleman "rendered eminent and unrivalled services!"

. . . . .

It may be protested that the question as to whether Coleman himself was a "rascal" (as Smith would have him) or a "gentleman" (as Leclainche would have him) or a happy blend (as well could be) of both (and as we now believe him to be, for it shines out in the ample record we have of him), concerns us very little at this date and that the dictates of "good taste" ought to enjoin us to "let the dead past bury its dead," and leave his memory at peace. Study of the evidence, however, compels us to the conclusion that the movement which culminated later, in 1844, in the grant obtained from, to use its words, "*Victoria, by the Grace of God, of Great Britain and Ireland, Queen, Defender of the Faith,*" of a Charter, which bestowed on us, among other privileges, the privilege conveyed in the words, "That the veterinary art as practised by the members of the said body politic and corporate solely and exclusively of all other persons whomsoever shall be deemed and taken and recognised to be members of the said profession or professors of the said art, and shall be individually known and distinguished by the name or title of veterinary surgeons"—that privilege came to us, we discern, in the main, as the outcome of a mass-reaction, perhaps not so much against the man Coleman himself, but almost certainly against what the man had stood for until then. We would be failing in putting forth what would be worthy of passing under the name of "history" if we disguised that view by the use of words less committing. Until the point at which the reaction swelled against him, it is clear that the man's disposition and actions conformed to the prevailing mood of the public at that time; this disposition and actions, more especially towards the latter part of his career—for according to modern standards he remained far too long (as M'Fadyean did later) at his post—were somewhat in arrear of what could have been impressed beneficially on the march of events. But, as the career of John Gamgee (1831-94) later so well illustrated, to have anticipated that march, though it would have brought him better renown from posterity—and to the measure that he anticipated he would have been classed as a "genius"—would have brought him personal disaster—a contingency which he had abundant wit to avoid. The names in the two passages inscribed at the head of this essay, namely, those of Thomas Walton Mayer and Francis King, are those of *young* men, with the advantages of good fathers practising the same art to inspire them to action. Pioneering, it has been said on authority,* demands that the energies of youth shall not be frustrated. It has been a mark of British genius that, on the whole, though not always, it had not been unduly thwarted. In any case we see the outcome very clearly. It is remarkable how many of, as Leclainche would call them, the *élite professionelle*, who were concerned in the movement were similarly blessed, notable among whom were the Turners, the Goodwins, the Fields, and the Mavors—and, indeed, the one whom we think was the outstanding veterinary character of the period, William Dick, could be classed with them, even though his father had not embellished himself with the then newfangled word "veterinary surgeon," and was content with being a "farrier and blacksmith." Coleman, it is on record, dismissed William Dick as "*a vulgar Scotsman.*" That valuable record helps us to perceive still more clearly the mainsprings of human action at that time.

To support the thesis here presented it will be necessary to touch in five essays on the main points that need further elucidation:

(*a*) The causes of the interest displayed, particularly by the surgeons, in veterinary work in England, with their resulting dominance in veterinary affairs at the beginning of the modern veterinary era;

(*b*) The great social transformation wrought by the Industrial Revolution, coinciding with the early stages (1791-1844) of the modern veterinary era in Great Britain;

(*c*) The Industrial Revolution and the Concurrent Agricultural Revolution: their Mutual Impact; the effects upon Livestock Husbandry and the consequent changes in the Nature of the Demand for Veterinary Service and Veterinary Education;

(*d*) The Animal Plagues, their prevalence and effects, how they were encompassed, and the lessons learned therefrom;

(*e*) The Interplay of the Above Factors upon the Course of Events culminating in the Establishment of a Legally Recognised Veterinary Profession with the Obtaining of the Charter of Incorporation in 1844.

To have stated the headings of the salient factors severally as above almost in itself invites the reader's own conclusions.

(a) The causes of the interest displayed, particularly by the Surgeons, in veterinary work in England with their resulting dominance in veterinary affairs at the beginning of the modern veterinary era.

This phenomenon repays close study, for many reasons. The drawing of an analogy between the present medical and veterinary profession is dangerously tempting, especially when there is a wish to bolster up an argument in support of some project conceived in a veterinarian's mind for the purported better development of his own profession. The analogy may be, on occasion, quite properly drawn. On the other hand, it may be wholly false. Nothing could be more erroneous, or more calculated to do harm, than to suppose for the purposes of argument that the veterinary profession is a recent off-shoot of the medical profession which has been transplanted, as it were, into somewhat different soil, and that all now needed to overcome a retardation in development is to apply the measures already found or calculated yet to succeed in promoting the growth of the parent plant. The professions have different roots, which need to be respected. The medical profession at the time of its legal reorganisation as a single profession in 1858 had three different roots, each running far back to derive sustenance from very different soils. Only one of these contrived to run, for a long time, contiguous with the root-system of the veterinary profession, and then only, as it were, temporarily and in some localities, such as in particular England at a recent date and China at a remote date. The whole anecdote of the Charter of 1844 could be not unfairly represented as the departure from a contiguity that had been close for half a century and certainly not distant for far longer and that had become oppressive to healthy growth of the veterinarian's art as such. This, of course, does not mean that circumstances will not change again so as to suggest advantage from restoration of that contiguity, or perhaps—what is more probable—close contiguity with a different or, as it were, with a new root shot out in the further vigorous evolution of human medicine. Some of the chief points in this history are the following:—

Throughout the Middle Ages blood-letting (venesection) was a common method of treatment prescribed by the Physicians, who, being men of learning, their learning being derived from study of the ancient texts handed down (in Latin) from Greco-Roman times and acquired in the atmosphere of the Church, delegated that species of manipulation to the unlearned, the class most amenable to perform the work being the barbers. Blood-letting was indeed a "routine" treatment for most ailments, of men and animals, until the century the event at the beginning of which is being now commemorated was well advanced. The other common treatments prescribed by the Physicians were purges and emetics, the ingredients of which were dispensed and administered by the Apothecaries. The Barbers, enriched by the supplementary work which fell to them in this way from the Physicians or which they also performed independently, became organised into a strong craft and in 1462 were incorporated by Charter granted by Edward IV. In 1530 certain by-laws were approved by the Lord Chancellor (Sir Thomas More), one of which enjoined every man "enfranchised in the said fellowship occupying surgery shall come to their Hall to the reading of the lecture concerning Surgery every day of assembly thereof, etc." In 1540 the Barbers and Surgeons of London were incorporated by an Act of Henry VIII. From early times, in Greece and Rome, dissection of the dead body was abhorred, and laws were passed to prohibit it. The last-named Act, however, gave the United Company of Barber-Surgeons the privilege of dissecting a certain number of bodies of condemned criminals, and in 1566 further by-laws provided for the appointment of two Masters and two Stewards of Anatomy yearly with whose permission only dissection could take place. The lectures and dissections continued with varying regularity until the dissolution

* See passage in the Report of the Linlithgow Royal Commission on Agriculture in India (1928), where the plea put that the head of a research organisation should be given as a reward for length of service is contested for this reason.

It is also well to recall that the moving spirits which brought into being our own organisation, the N.V.M.A., in 1882, were two young men, John Henry Steel and George Banham (see penultimate article in this issue).

of the United Company in 1745, and they were separately constituted as a "Corporation of Surgeons" and a "Barber's Company." Until the beginning of the 18th century there was no regular teaching of anatomy as part of the medical curriculum, but it afterwards became prosecuted, outside the hospitals, in private schools of anatomy, with increasing ardour, the difficulty of obtaining human bodies, however, still remaining an obstacle. From about 1700 onwards 28 private schools of anatomy could be identified in England. This difficulty of obtaining human bodies for dissection led the enthusiastic among the teachers of anatomy to dissect the bodies of other animals than man and consequently take a profound interest in comparative anatomy. Thus we find, for example, one of them (James Douglas) publishing a book in 1707 entitled "Comparative Description of the Muscles in Man and a Quadruped," giving "an account of what Dr. Douglas obliges himself to perform in a Course of Human and Comparative Anatomy. From the Blew Boar over against the end of Fetter Lane in Fleet Street," and, in his preface, he says, "I chose a dog for comparison because young students of anatomy may readily procure so common a subject. Galen recommended monkeys and apes, from which most of his descriptions are taken. The method is the same as is made use of at Surgeons' Hall in this City, the most noted and most illustrious school of anatomy in Europe. . . ."•

Thus we see the stage set for those who were apprenticed to human surgery to become interested in the domesticated animals having as a valuable introduction to their later interest a knowledge of anatomy, of which the common farrier and cow leech were profoundly ignorant. As the 18th century went on some of these men did rather remarkable work in the comparative field, their choice of a career indicating that they were not above manipulative work and objective study of any kind, as were the more "learned" physicians or "doctors." Thus when the two invasions with cattle plague occurred during the century, in 1714 and 1745, we find that the "farriers" and "cow leeches" were of such ignorance that they could not be consulted with profit by authority. The attitude of the Church also hindered application of the necessary measures. The measures necessary were clearly laid down, nevertheless, by Thomas Bates, F.R.S., Surgeon to H.M. Household, early in the 1714 outbreak and impressed by him on the authorities. They comprised the destruction and cremation or deep burial of sick cattle, disinfection of cowhouses, which were to be left empty for three months, and such other steps to eradicate the disease as, when put into effect, successfully eliminated the disease in a few months. The measures were such as were only relearned at enormous cost, after they had been forgotten by authority, following invasion with the same disease in 1865. Bates may, with some justification, be looked upon, therefore, as the "Father of Animal Health" using that term as it has now come to be applied as the designation of a government department that has carried out the "stamping-out" method as the line of public service the effective application of which it has to its greatest credit. He had been anticipated, as is described in a later section, but probably without his knowledge, however, in the preceding year in Italy by the brilliant scholar, Lancisi.† The action taken in the 1745 invasion, it may well be said here too, was less creditable, several physicians as well as surgeons being consulted, and the former writing upon it anonymously for fear that their display of interest in the "lower animals" would lose them their practices, and so the disease took about 12 years to stamp out.

During the latter part of the 18th century, the historical phenomenon here briefly traced produced in John Hunter (1728-93), "Comparative Anatomist and Surgeon," one of the greatest geniuses known to medicine, human and veterinary, whose memory is still being commemorated annually in the Hunterian Oration, the delivery of which constitutes perhaps the greatest honour that can be conferred on any man who has worked in this country in the field of medicine. A writer in a contemporary periodical recently has referred to John Hunter as "the Father of the Veterinary Profession." We are not so sure, however, that the title can be accorded to him, without detracting somewhat unfairly from the homage that deserves to be paid by their posterity to the promoters of the movement which culminated in the grant of the Charter of Incorporation of 1844, which in law for the first time gave to those who practise the veterinary art recognition as a "profession." That did not take place until 51 years after John Hunter's death. But it was entirely by mischance, as we can now perceive, that he cannot be acclaimed without question as the "Father of the Veterinary Profession," for the plans which are attributed to him and are published in a little book entitled "*An Account of the Veterinary College, from its institution in* 1791. *London*, 1793,"• would, if they had been faithfully carried out according to his intentions, have given us from the start a corps of practitioners who would have been trained both clinically and scientifically, according to a perfect schedule, to grapple with all problems concerning animal health and disease that lay ahead. One can discern no reason now why the programme could not have been achieved on the score that it was over-ambitious for the time. Among the names of the few (about 13) who were trained under the first professor, Sainbel (1750-93), are those of men who, although they could not complete the projected three years' course of training, were highly cultured and of good social position and proved afterwards extraordinarily successful in general practice. That it was not to be so was because Sainbel died in 1793, that is, within two years of his appointment, and this "shock was intensified a few weeks later by the tragic death of John Hunter."† A Surgeon was appointed to the post (E. Coleman), but his natural outlook‡ did not correspond with that of Hunter. This appointee remained, however, on terms of the closest possible friendship with contemporary surgeons then rising to great eminence in the world while confining their own main interests to the highly remunerative operative work on the human subject, and not to the comparative field. The chief of these was Sir Astley Cooper, who remained Chairman of the Examining Committee of the London Veterinary College throughout Coleman's long tenure, meanwhile practitioners of the veterinary art being excluded from that Committee and from becoming subscribers to the College, so that they had no voice in the governance of the College.

During this period the Physicians and Surgeons§ still had separate Corporations, or Colleges, the College of Physicians in London having been incorporated in 1518 by Henry VIII. Members of the Surgeons' Corporation were excluded from entry into the Physicians' unless they became disfranchised and served afterwards the apprenticeship required specially by the College of Physicians to become Licentiates. John Hunter's elder brother, William, was compelled to undergo this process on transfer in 1756. The Society of Apothecaries, however, admitted the Surgeons without that necessity, and holders of the privileges of the two corporations were to be found in official positions with the double title *Surgeon-Apothecary*. There were, however, signs of rapprochement between the Surgeons and Physicians, and the Examining Committee of the London Veterinary College came in time to be composed of men belonging to both these bodies. It can be readily perceived that during this phase of prospective advance in status of the Surgeons into social equality with the Physicians they would feel averse towards avowing publicly an intimate association with their former natural relations, the Veterinary Surgeons. As late as 1840, the brilliant veterinary scholar, William Percivall (1792-1854) complained in vain about his exclusion from being a possible candidate for membership of the "Medical Examining Committee" of the London Veterinary College because even though after his veterinary training he had taken pains to qualify as a Surgeon it was held against him that he had after-

• Quoted from G. C. Peachey's *A Memoir of William and John Hunter*, 1924. (Much of the information in this section is taken from that book.)

† Fleming, G. *Animal Plagues*, Vol. 1 (1871), p. 222, and Smith's *Hist. Vet. Lit.*, 2, 10.

• Youatt reproduced this book, in extended extract, serially, in *The Veterinarian*, 1831, 4, 98, 143, 203, 253, under the title "*The History and Original Constitution of the Veterinary College.*" He there says it was then out of print. We are much indebted to Professor Buxton also for sending us an original of the first College prospectus entitled "VETERINARY COLLEGE, LONDON, ESTABLISHED APRIL 8, 1791, FOR THE REFORMATION AND IMPROVEMENT OF FARRIERY AND THE TREATMENT OF CATTLE IN GENERAL. LONDON, 1791." Comparison of the texts of these two historical veterinary documents enables us to submit confirmation of the belief expressed by Youatt, M'Fadyean and others that one can discern in the 1793 document "the hand of John Hunter" (see M'Fadyean, Dick Centenary Oration, *J. comp. Path*, 1923, **36**, 243).

† See Smith's *Hist. Vet. Lit.*, 2, 184 (for biography of Sainbel), 204 (for J. Hunter), and 3, 13 (for E. Coleman), in which the circumstances and the sequelae are well narrated.

‡ How different the natural outlook of John Hunter, the great exponent of the value of the comparative method of study, was from that of Coleman, the pupil (with Astley Cooper) of his surgeon friend, Cline, was on the question of social uplift is testified by the following anecdote (quoted from Peachey's *Life*). Coleman, it is well known, to the end of his life came to decry the advantages of the comparative method and persistently warned his students of its dangers. In the spring of the year 1778, in spite of having a large medical practice, Hunter published his second paper on the heat of animals and vegetables, and was still busy with hedgehogs. Then writing to his friend Edward Jenner (later to become immortalised through his work on small-pox vaccination) he says, "I was told the other day that you was married to a young lady with a considerable fortune. I hope it is true, for I do not know anybody more deserving of one. What has become of your paper on lead in cider?" Jenner's answer was delayed for some weeks, and then, on September 25th, comes John Hunter's letter of commiseration and comfort. "I was at a loss to account for your silence, and I was sorry at the cause . . . I was glad when I heard you was married a woman of fortune; but let her go, never mind her. I shall employ you with hedgehogs."

§ Smith has given a concise review of the relations of these bodies and state of surgical practice during the 18th century at the beginning of the second volume of his *History of Veterinary Literature*.

wards elected to seek his livelihood as a Veterinary Surgeon rather than as a Surgeon.*

The question may now well be asked, why was it that since a calling so highly exalted in the public esteem as human operative surgery should have evolved from such a humble mediaeval craft as that of the Barber, the veterinary art should not have done likewise? The answer is clearly that it did, but that the process of evolution was for a long time, for reasons that can most aptly be set forth perhaps by the mythologist, frustrated.†

After the fall of the Roman Empire, the Latin expression "veterinary" became forgotten in Western Europe. Communications fell into disuse and communities became broken up into small groups under the overlordship of feudal barons, who were not wealthy enough to provide for themselves large cavalry and other mounted troops, for which the Romans, especially in their Eastern Empire, employed skilled practitioners. The duties of their relatively small courts became partitioned out among officials designated as Marshalls‡ (in charge of the horses), Seneschals (in charge of domestic arrangements), Chamberlains (in charge of the private chambers), etc. In the Teutonic countries, the Marshal or *Marstall* remained in charge of the horse management and supervised the maintenance, feeding and health of this animal. Even though he might not undertake treatment of sick horses himself, the work was carried out under his direction. The *ars veterinaria* of the Romans thus became known in England as Marshalcy, and similar terms were used in other western countries (for example, *maréchalerie* in French). Thus in the 14th century, we learn from Dr. Bullock, "practitioners in this country were known as Marshals. The "Master Marshals" of London were organised as a trade guild before 1356, in which year they were granted an ordinance by the Mayor and Aldermen to rule the craft." In Berlin (it transpires from the researches of W. Rieck§) the *Marställe* comprised practitioners who were highly respected, scholarly, and some of them diverted their attention later, with the rise in value of cattle, to practise on those animals. He mentions in particular Martin Böhme (1559-1639) who played a great part in the development of modern veterinary instruments from the relatively crude tools that had been employed until then, and Johann Andreas Gaab who improved on them over a century later.

Meanwhile, this development became entangled with a technical invention dating back only as far as towards the end of the ninth century, when it was discovered that horses' hoofs could be shod with nailed-on iron shoes, the discovery having been made originally probably in the East. During the period of the Crusades which followed, traffic on horseback over these long journeys became periodically enormously increased. Horse-shoeing became, therefore, enhanced greatly in esteem as a craft, and the importance of the horse-shoe was such that the mediaeval lord was wont to emblazon it on his shield and coat-of-arms. The most esteemed craftsmen in the art of *ferrer à cheval* became known as Farriers. Soon, however, these skilled craftsmen who had at first carried out the orders of the Marshals began to practise Marshalcy on their own account, and more experienced in the actual handiwork and accustomed to carry out the administration of medicines and minor surgical operations, the Farrier was able to deputise for his superior when necessary and eventually oust him.

In Arab countries, however (as we have already seen in the preceding essay), this kind of association, which was bound to lead eventually to conflict, was not tolerated. Such was the religious devotion of the Arab towards his horse that the superior class (the *albeiteras*), to whom was assigned the treatment of the sick horse, was accorded the highest social dignity and special privileges, his work indeed in some territories being regarded as so sacred that it was beneath him to accept pecuniary emoluments.

It became otherwise in the West. In France the shoeing-smith usurped the title of Marshal and he remains to this day a *maréchal des chevaux* or *maréchal ferrant*. In England the shoeing-smith who undertook the treatment of horses as a side-line named this branch of his work Farriery, and to the extent that he presumed competence in it designated himself a Farrier. The class being for the most part uneducated and illiterate the art of the Marshal became degraded in the hands of those who practised it. The large output of book literature on the subject, for which there seemed to be an extraordinary public demand, and which was couched in bombastic and pretentious language, consisted almost entirely of recipes, purporting, as would be expected, to appeal to the lower intelligence levels, to be "secrets" and "infallible."

When, therefore, national calamities, such as the invasions with cattle plague, occurred in the 18th century, no assistance could be obtained from the Farriers, who were universally dubbed as "ignorant" and "brutal," and, as has already been indicated, resort had to be had to the more enlightened class that could advise on such matters, namely, the Surgeons. It was likewise with the "cowleeches" who were also notorious for their ignorance.

There were, however, a few outstanding exceptions, such as Andrew Snape, Farrier to Charles II, who published in 1683 a notable contribution entitled *The Anatomy of the Horse*, and during the latter part of the 18th century, in the period immediately before the opening of the veterinary colleges, James Clark, of Edinburgh, Farrier to the King in Scotland, who was the best and last of them all. After scrutiny of his work, Smith accords him the title of "father of veterinary hygiene, not only in this country but in Europe."* "One of the strong features of James Clark's life," says Smith, "is his insistence on the formation of veterinary schools for the training of the rising generation." "Towards the end of Clark's life his dream of veterinary education in Britain had been realised, and in a work published subsequent to the creation of the school in London, Clark urges a school for Scotland; in fact, he says, one was already approved to which he had been appointed professor when the political situation rendered it impossible."†

In reality, however, William Dick (1793-1866), who later opened the first veterinary college in Scotland, in 1823, belonged to this heritage and tradition. M'Fadyean (1923)‡ was undoubtedly right when he said that the three months' training which Dick underwent at Coleman's College in 1817, and after which he obtained a certificate, could only be regarded in the nature of "a visit." Leclainche (1937)§ cannot well have been right when he said that, "the fact that he (Coleman) sent out after a few months a pupil so exceptional as Dick shows that, if he had little consideration for his ordinary pupils, he knew at least how to choose among them." All that one so well knows about his parentage, upbringing, temperament and outlook eloquently declares that he was a "carry-over" of the very best of the Farrier class, and that he was endowed by Nature with the gifts to initiate the enterprise with which his name will for ever be associated regardless of such inspiration as he could have derived from Coleman. Besides, there is ample testimony that he derived very little from it, although he undoubtedly received a good deal in Edinburgh from Dr. Barclay, who instilled in him some teaching in comparative anatomy, and from Professors Gregory and Hope.

Similarly, among those who pioneered in England the movement for the 1844 Charter, we cannot but suspect that they contained a far larger ingredient bequeathed them from the Marshal-Farrier tradition than was acquired from the tutelage of Coleman and the scrutiny imposed upon them by his Surgeon friends. This suspicion is strengthened when we note what a large proportion of those who took an active part in the Charter movement belonged to families which had practised the art that had been, until then, denominated as that of the Farrier.

Casting around at the beginning of the new era for a designation that would be more fitting for those who had qualified from the London College, the word "veterinary" was revived as it had been on the continent, to distinguish the new class of practitioners from those who had previously practised the art of treating sick animals. The word had lapsed in the English language until it was used again in a book written by Sir Thomas Browne in 1646. Not a few scholars, however, who were conversant with its etymology

* See Smith, *Hist. Vet. Lit.*, 2, 166, and *The Veterinarian*, 1840, 13, 94, where is printed editorially an open letter from W. Percivall to Bransby Cooper (Sir Astley Cooper's nephew) protesting against this anomaly.

† These reasons are well set forth by Leclainche (*History of Vet. Med.*, p. 125), and the circumstances in England can well be traced, thanks to the the researches of Dr. Bullock (*Proc. Roy. Soc. Med.*, 1929, 627). The narrative is condensed in the Historical Preface to the R.C.V.S. Register.

‡ According to the *Modern Oxford English Dictionary*, this word traces back through the old French *mareschal*, *marescal* (wherefrom the modern French word *marechal* is derived), the Frankish Latin *maricaleus*, to the old Teutonic type *markoska'ko-z*, from *markо-z* horse and *skolko-z* servant (German *schalt* rogue). The root appears to be derivative of current words in other modern Aryan languages, the modern Welsh *march* or stallion, *marchog*, to mount on horseback (used also in the extended sense of "achieve," "accomplish"). It is interesting to note that from its primitive meaning the word has come to be used in such connotations as Earl Marshal, Field Marshal, Provost Marshal, Air Marshal, to imply authority which is "supreme," as would be anticipated from the authority originally delegated to supervise "the horse." Reflection on the possibilities that would have arisen if the word "veterinary" had not been allowed to lapse for a long period while these newer functionaries were created makes it tempting to speculate as to whether instead of Marshal, Veterinary, perhaps abbreviated, would have been employed as the adjective to qualify their titles.

§ See W. Rieck (1932). *H. Hauptuer Instrumentfabrik für Veterinärmedizin Jubilaüms Katalog*, 1932.

* Smith's *Hist. Vet. Lit.*, 2, 115.

† In the Memorial booklet which the late Dr. Bradley wrote for the occasion of the Dick Centenary celebrations in 1923, he says, however, that he detects something in Clark's writings which do not stamp him as having the temperament of a pioneer.

‡ *loc. cit.*

§ Leclainche, E. (1937.) *J. comp. Path.* 50. 238.

were very dubious about its greater respectability. Among them was Bracy Clark, who first gave his choice to the words "*The Farrier and Naturalist*" to the periodical he brought out in 1828, but later changed it to the more elegant Byzantine word *Hippiatrist*. Questions as to the propriety of the word, however, soon were put aside by the force of common usage. When the Board of General Officers in 1796 deliberated on a suitable name to call the recruits into the Army from the London College who were employed to undertake work which had previously been taken up in part by the Army Surgeons they hit as a compromise on the designation Veterinary Surgeon, which afterwards quickly caught on as the choice of those engaged also in civilian practice and became their legal designation. As Smith rightly says, however, the term is, "of course, a misnomer; we have ever been more physician than surgeon." That view receives support, it may be added, from the suggestion recently made by authority* that in the execution of his legitimate duties towards the community, the veterinarian, by the nature of his training, ought appropriately to be regarded as the "Physician of the Farm. . . ."

(*b*) *The great social transformation wrought by the Industrial Revolution, coinciding with the early stages* (1791-1844) *of the modern veterinary era in Great Britain.*

"No great movement among the human race," writes a modern historian† "—not the Anglo-Saxon migration, the Crusades, the Hundred Years' War, the Reformation, nor any other—was ever produced by one motive alone." At the very head of this section we have reproduced a passage, from General Smith's writings, which might be taken to mean that the movement for the Charter of 1844 was produced by "one motive alone," namely, "the emancipation of the profession from the fetters with which Coleman had bound it." So far, in this discussion, we may be assumed to have produced some evidence which gives full support, with some reservations, to Smith's view. "It is comparatively easy," says another historian‡ "to write a monograph on the life of an individual or a short episode of history. But the modern student, knowing well the mass of material he has to collate, and dreading lest he may make a slip through overlooking some obscure or newly discovered source, dislikes to stir beyond the boundary of a subject, or the short period on which he has made himself a specialist." Consoled by that statement we can say at once that it would be fairly easy to reproduce from the records short biographies for this issue of the chief actors and trace their steps in the particular movement started in 1840 that succeeded in getting the Charter of 1844. In that way, the inference might be drawn—and, if it were, we submit, far too readily drawn—that the men who led the movement which succeeded in getting the Charter were a much more determined body or were inspired by a far loftier motive than were those who had failed to obtain a Charter about half a century earlier, and, at that time, it was for the London College at its beginning.

The veterinary profession now enjoys certain privileges which have been granted to it by Royal Charters and Acts of Parliament, of which the Charter of 1844 was "*the first step.*" As between the privileges enjoyed under a Charter and those conferred by an Act of Parliament there is, in the British Constitution, a good deal of difference, and this difference can perhaps best be appreciated from the historical standpoint. Much may be heard to the effect that all is not as it should be with the veterinary profession to-day even, and it will doubtless be said, in consequence, with some reason, that we are magnifying the importance of the original Charter. Indeed, it is on record that the ink of the signatures was hardly dry before troubles arose, and while Smith has said that it would require a whole volume to tell the story of the Charter it would need another and larger volume to give a summary of what has happened after the Charter. Hence, we have felt compelled not to attempt to deal with the government of the profession after the Charter. This need not be surprising. It was the Great Charter of 1215. it has been said by one of the historians already quoted, "which fixed for ever the liberties of England; so that in the view of Bishop Stubbs, the whole of the constitutional history of England since then is simply a commentary on Magna Charta." We may say, with almost equal justification. that the Charter of 1844 is to the veterinary profession what the Great Charter of 1215 was to the whole country. We may say, too, with certainly at least equal justification, that we have not experienced troubles in working upon that foundation of our liberties any greater in proportion than those which followed the Great Charter of the whole country.

A Royal Charter is a "donation" of the sovereign; it is not a law, but an exemption from law (Hobbes). It therefore has not the force of law, which can only be made by Parliament. Parliament, elected by and therefore representing the public, is extremely jealous of maintaining intact those privileges, which it exacted on behalf of that whole public when they obtained the Great Charter, from encroachment by individuals or sections to whom special privileges or "monopolies" are granted by the Sovereign.* The power of granting these monopolies has been reserved by the Sovereign as a surviving privilege retained by him from the time when, before the Great Charter, government was vested entirely in him acting with the advice of a Council which he called at his discretion in the shape of the chief barons. From the time of Simon de Montfort's first parliament in 1264, however, the national will has expressed itself more and more through Parliament, the responsibility for answering to it upon different questions affecting the public being vested in different Ministers of State. Several activities, however, which need, in carrying out their day to day work, a large measure of independence from interference by Parliament, remain answerable, at any rate in appearance, to the Sovereign acting only upon the advice of a Council—the Privy Council—which, however, contains certain Ministers of State, but they are not answerable in that capacity to Parliament. But there have been some curious fluctuations. Under the Tudors the custom of the Sovereign to grant monopolies increased considerably, especially to traders and trading companies overseas, at a time when England was beginning to show great development through overseas expansion. The Tudors, however, knew just how far to go without causing annoyance to Parliament. The Stuarts, afterwards, on the other hand, do not appear to have had this gift, and in 1624, the fourth and last Parliament of James I "passed an important statute forbidding the granting of monopolies in trade or commerce to any individuals or to political or other corporations.†

The date (1840) when the movement took shape to obtain the Charter of Incorporation of the Royal College of Veterinary Surgeons, however, coincided with a sudden general and rather violent swing in public opinion which expressed itself in its most extreme form in the Chartist Movement (the "People's Charter"—a document embodying the principles and demands of the Chartists having been published in May, 1838). It was as if Parliament had failed to adapt itself quickly enough to meet a clamour for freedom in enterprise—a clamour which far exceeded even any that had arisen under the Tudors (when England for the first time lost her insularity) and which had wisely been nurtured by those astute monarchs. Now again the enterprising sections of the public appealed to their Sovereign for the special privileges they needed rather than to Parliament.

The date, 1791, when the London Veterinary College was opened, was two years after the beginning of the French Revolution. Pitt, then Prime Minister, looked, we learn from Sewell, with a friendly eye upon the opening of the College, and for some years it received what was, for those days, a fairly substantial grant from Government (£1,500 a year). The American colonies had been lost in 1783, and so what might have been a golden opportunity for the profession to develop from the beginning to meet demands overseas had been dried up. The war with France began in 1793 and was not closed till the defeat of Napoleon at Waterloo in 1815, men trained at the London School having been entered for service in commissioned rank under the new title Veterinary Surgeon in 1796, and the names of several are seen in the lists for the Peninsular and Waterloo campaigns. "England emerged from the great war the most powerful nation in the world." Though in 1815 she reached the zenith of political and military prestige, she touched the nadir of industrial dislocation and political discontent. The period of the great war coincided with the *Industrial Revolution*, when "*thanks to a series of remarkable mechanical inventions, England, which had for centuries been a granary and a sheepfold, was suddenly transformed into the workshop of the world*" (Marriott). (Our italics.) All this resulted in: "the stupendous increase of aggregate wealth; the rapid growth of population and the significant changes of population and the significant changes in distribution; the rise of new industries and the growth of cities; the development of means of communication; the expansion of oversea trade." The 19th century, with an event occurring in the early part of which it is vital for us in the veterinary profession now to understand its meaning, became "a period of

* Loveday Report, 1938.

† R. B. Mowlat. (1924.) *A New History of Great Britain*, p. 118.

‡ Sir Charles Oman in Introductory Note to Sir J. A. R. Marriott's *England Since Waterloo*.

* See a note on "Corporations" in *Veterinary Record*, 1943, 55, 475.

† As we have said in the preceding section, something of this kind took place later, in 1813, when the Spanish Parliament (the *Cortes*) meeting at Cadiz, passed a law abolishing corporations, with the result that the ancient self-governing veterinary profession of that country was shattered.

Democracy and Empire, Science and Industry. It witnessed a four-fold revolution: Political, Social, Economic and Intellectual." "The years between 1815 and 1832 witnessed the close of the rule of the aristocratic oligarchy which had governed England, and in the main with conspicuous success, for a century and a half. The Reform Act of 1832 dethroned the landed aristocracy and committed supreme power to the commercial classes." The new monarch who came to her throne in 1837, and whose name is on our Charter, now has her secure place in history, because like her great predecessor of the same sex, the last of the Tudors, she made it a matter of duty to reconcile herself to and study the wishes of those classes emerging in her realm eager to reap the prosperity that was abounding if above all they were granted freedom for their enterprises "*emancipated from the fetters with which some 'Coleman' had bound them.*"

A reading of the veterinary journalism of the period gives us hardly any indication of this tremendous change in the whole scene; a reading of Smith's histories gives us none.

(c) The Industrial Revolution and the Concurrent Agricultural Revolution: their Mutual Impact; the effects upon Livestock Husbandry and the consequent changes in the Nature of the Demand for Veterinary Service and Veterinary Education.

Whether or not, and to what extent, the wars of the three preceding centuries on the scale they were waged on land and sea contributed, as has been strongly alleged by some veterinary historians, towards the phenomenon under discussion is hard to decide.* But it is plain that the period immediately before the event the centenary of which we are now commemorating was marked by a display, after a long period of torpor, of gathering energy in the human race generally in Western Europe which drove it to find outlets for the expenditure of that energy in all sorts of directions. The prolonged wars of the preceding medieval period were, relatively, small-scale operations, the actual contestants being largely mercenaries and the actual conduct of those wars was desultory, only flaring up at long-spaced intervals to localised violence. Hence, communications being poor, having fallen into complete neglect after the fall of the Roman Empire, and the manorial and village communities scattered and small, those wars left the great mass of the people undisturbed and free to pursue the crude methods of tillage and husbandry on the wasteful open-field system which each community had pursued for countless generations, heedless of and indifferent to any happenings in the way of improvement taking place in neighbouring communities. Until the 18th century, therefore, ploughs and harrows remained of primitive type, varying very little in the kind that were used; the horse-hoe had just been introduced; while all crops were got in by hand, the scythe, the sickle, and the reaping hook being the only tools used, and the grain was separated from the straw by the use of the flail. For man and beast little was grown besides cereal crops, the average yield per acre sown being very small. Without proper conservation of food beyond some hay and straw for winter keep—farmers and graziers were forced in bad seasons to kill their stock cattle and salt their meat for winter use. Hence, for centuries, the only meat generally available in the winter was salt meat.

In the course of the 18th century, however, men of rare genius, often working against great difficulties, appeared who exercised a profound effect upon the traditional systems of land tillage and animal husbandry. What Hargreaves and Arkwright had meant to industry; Watt, Telford and Stephenson to transport and communications, the great agricultural pioneers of the 18th century meant to agriculture,† like Jethro Tull (1674-1741) ("the greatest individual improver that British agriculture has ever known") in improved tillage; Robert Bakewell in selective stock-breeding; Coke of Holkam and Lord Townshend in sponsoring the introduction of root crops, crop rotation, and showing the advantages of manuring; and Arthur Young in his propaganda for the breaking up of the open fields and dividing the commons. From being since Tudor times a wool-growing and grain-exporting country, England became converted soon into a country with a highly industrialised and urbanised population, the pressing needs of which in food were met by the new rapidly developing scientific agriculture. A self-sufficing, sparsely populated countryside in which lay large tracts of waste land, became converted therefore into a factory for producing beef, mutton, corn and other foods for the urban areas, for as yet there were no means of feeding it from overseas. Into this rural development, the ruling classes of the country entered with great zeal and enterprise; with the perilous fluctuations in currency during the period, land represented the safest investment, and the entry of large capital into agriculture saw the rise of the great landlords, the disappearance of the smaller freeholders, and the consolidation of large farms. Great improvements were made quickly in the various kinds of agricultural machinery. Although these developments had begun through the initiative of a few gifted and enterprising individuals during the 18th century, it was not until the 19th century was well advanced that the change-over had become general and complete, but the casual traveller through the English countryside to-day would scarcely realise that its "green and pleasant land" had assumed an entirely different aspect at a period no more remote than is covered by the passing of about eight human generations. Yet, incredibly short though that process would be regarded by the modern research worker who contemplated the production of artificial variation, for example, in a species of pathogenic micro-organism or virus by so-called "passage," it has been during a process that lasted relatively no longer that a drastic transformation has been sought and, at least in appearance, successfully wrought, at a far higher level in the evolutionary scale, of both our social anthropology and animal ecology. The question must be asked whether or not much that has come about in the way of disorder among our animals can be attributed to the inability of the various species to respond as completely as we had thought they could to the stresses imposed upon them to vary so quickly to meet the changed demands made upon them.

The general historian notes that within an interval of time extending from only shortly before the beginning of veterinary education in this country, in 1791, and the date of the grant of the Charter, in 1844, there had been other infinitely more important occurrences in the world: such as the loss of the American colonies in 1783, the French Revolution in 1789, war with France in 1793, and the Battle of Waterloo in 1815. Again, writing historically, the veterinarian notes concurrently during that interval a complete change in the demands made for his qualified services. With the industrialisation and urbanisation of the country the horse assumes an importance now not only as an animal indispensable to the cavalry and artillery and as the token and emblem especially of "gentility" in the social order. For the first time, on a large scale, this animal becomes needed urgently for commercial purposes within the towns, for transport along the greatly improved communications between towns, and for the new methods of tillage on the farms. The opening of other means of communication during the period, such as, first, the extensive canal system, and, afterwards, the railways, far from causing the horse to be superseded, provided special new uses for the animal. What had caused most disturbance previously in the countryside—such as widespread "scab" and "rot" in the sheep and the occasional outbreaks of "murrain" among tillage oxen—begin to give place to the variety of problems that are now so well known to us but were until then almost unknown.

The modern veterinarian, contemplating the transformation during this period as a student of ecology and the other newer biological sciences, notes, with most particular interest, that in each species of larger domestic animal there was being wrought a change, affecting it profoundly both genetically and environmentally. Much of what made call on the services of his forerunner living through that period and was most perplexing at the time in the shape of the common "unsoundnesses" both of the horse and

* "The foundation of the Veterinary Schools was not brought about in any way through philosophical or medical inspiration, but essentially for economic and utilitarian reasons. Sir John M'Fadyean (1923) has traced most accurately how these reasons impelled governments and peoples to take action in view of the enormous losses caused among Army horses during the wars of preceding century (especially from glanders) and the terrible losses caused by cattle plague, or rinderpest ("murrain") (which followed inn the wake of armies) during the same period."—LECLAINCHE, *Histoire*, 1936, p. 231. This view is not wholly acceptable to all veterinary historians, and it cannot well explain, for example, the beginning of veterinary education in Scotland, which was brought out by a man of the "farrier" class, William Dick, who remained wholly ignorant till the end of his days (in 1866) of the real nature of contagious disease.

† "The great changes which English agriculture witnessed as the 18th century advanced, and particularly after the accession of George III (1760), are, broadly speaking, identified with Jethro Tull, Lord Townshend, Bakewell of Dishley, Arthur Young, and Coke of Norfolk. With their names are associated the chief characteristics of the farming progress of the period, which may be summed up in the adoption of improved methods of cultivation, the introduction of new crops, the reduction of stock-breeding to a science, the provision of increased facilities of communication and of transport, and the enterprise and outlay of capitalist landlords and tenant farmers. The improvements which these pioneers initiated, taught or exemplified, enabled England to meet the strain of the Napoleonic wars, to bear the burden of additional taxation, and to feed the vast centres of commercial industry which sprang up, as if by magic, at a time when food supplies could not have been provided by any other country. Without the substitute of separate occupation for the ancient system of common cultivation, this agricultural progress was impossible. But in carrying out the necessary changes, rural society was convulsed, and its general conditions revolutionised. The divorce of the peasantry from the soil and the extinction of commoners, open-field farmers, and eventually of small freeholders, were the heavy price which the nation ultimately paid for the supply of bread and meat to its manufacturing population."—Lord ERNLE, *English Farming Past and Present*, 1936 Edition, p. 149.

of some of the other animals, can be ascribed with some reason to the stresses caused by the rapidity of the change-over itself. However the disorders will be ultimately explained as they then arose, particularly in the form of the "unsoundnesses," as they were called, of the economically predominant horse, or as they have since been arising in the whole farm stock complement, a new and particular need arose among a public that wished to be safeguarded and was willing to pay for competent professional help that called more especially for skill in a specialised form of diagnosis and prognosis. And among that public, persisting to this day, its appreciation of the confidence reposed in that help finds expression in the uses to which in the language generally the veterinarian's abbreviated title is applied.

Something needs to be said at this stage about the part played by the great Societies in fostering development during this period. "The political world was then so corrupt that public-spirited men welcomed the opportunity . . . to serve their country in an atmosphere free from 'graft'," by giving their services through a Society rather than by urging for an increase in the functions of government by the creation of the several new Departments of State which have since come into existence. Institutions of this kind had long been in existence, particularly in Italy, and the Royal Society at last became established during the reign of Charles II. The first Society in England to take an active interest in agriculture was not founded, however, until a century later, namely the Society of Arts, in 1754, in London. Its interests, however, were confined almost entirely to the crops and soils side of agriculture, and it was not until the Royal Agricultural Society of England was founded in 1838, that a great and powerful Society came into being at the heart of affairs which directed collective energy towards farm livestock improvement, and in its train endeavoured to redirect the trend of veterinary thought so as to contribute of its best towards that improvement. The name of William Youatt stands out conspicuously for his endeavours to link up veterinary interest—reluctant as it was to depart from what seemed then to have become its settled "job" of confining itself to the current and more lucrative horse practice—with general agricultural practice at the inception of the "Royal." Smith says we may be certain it was Youatt who, in 1838, caused an insertion of a clause in the Charter of the Society which gave the Council the power to take measures to improve the veterinary art in its application to cattle, sheep and pigs. His endeavours bore fruit in the introduction of teaching at the London Veterinary College in 1842 in what was known then as "Cattle Pathology"—"Pathology" being used at that time in the much wider sense connoted by the etymology of the word and not restricted, as it was later, first to Morbid Anatomy and then to the various ancillary sciences collectively bound with an essential discipline in that particular subject.

Previously a few other powerful Societies, wholly or largely devoted to the furtherance of agricultural pursuits, had come into existence which exercised a profound effect indirectly on the early organisation of the veterinary profession. The oldest of these was the Royal Dublin Society, first founded in 1731, which did very valuable work in Ireland for many years for the profession in its endeavours to introduce veterinary teaching; it had the advantage of Government aid. Among the more exclusively agricultural societies first established in Great Britain—the Bath and West of England Society in 1777, the Highland Society in 1784, the Smithfield Club in 1798, the Farmers' Club in 1793, and the various county societies—the contribution of two of them to promoting the veterinary art can be easily singled out as historic. The first of these was the County Agricultural Society founded with its headquarters at Odiham in Hampshire, which is mentioned later in the section dealing with the Royal Veterinary College, London, as having been the first to organise a movement for commencing veterinary education in this country.* The second was the Highland and Agricultural Society of Scotland which gave its powerful patronage to Professor Dick at Edinburgh from the time he opened his veterinary college there in 1823. The Veterinary Certificate of this Society continued to convey a qualification to practise after a proper examination, except for a brief spell immediately after the 1844 Charter, until the passing of the Veterinary Surgeons Act, 1881, when what has since become known as the "One-Portal System"—meaning that the passing of the examinations conducted by the Royal College of Veterinary Surgeons alone qualifies for a licence to practise under the then fully legalised title veterinary surgeon—came into existence.

It may well be asked why at this important period of transformation in affairs stronger support was not forthcoming from sources other than those of free and voluntary enterprise such as have now been indicated. For long, complaint has been made that Government itself did not participate, as was the case at the time in almost all States in Western Europe. The universities have also been reproached for not only missing opportunities to encourage development of the profession but also, when approached to do so, of setting their face against it in a way that seemed almost to imply contempt. In neither case is the accusation of neglect fully warranted when the historical causes are closely examined, but on the contrary it will be found that to an extent that was not negligible and might have been better still exploited, these institutions lent the aid that seemed during the time to be within their power in the discharge of their proper functions, and this was much more limited than it has often been thought to be.

Not until the administrative machinery was made available, through the creation as recently as 1910 of the Development Fund ("something novel in financial administration") were the means provided for a government department to apportion public funds for promoting developments which had until then been regarded as the natural outcome of free and unaided enterprise. The original Board of Agriculture founded in 1793 through the initiative of the Scottish landlord, Sir John Sinclair, Bt., who enlisted Arthur Young, a true friend of the infant profession, to his aid as Secretary, was not a Government Department in the strict sense of the term. It was a Society founded by Royal Charter and supported by an annual grant from the Exchequer, and its true successor, after its short life until 1822, is the Royal Agricultural Society of England rather than the present Ministry of Agriculture. During that short life, which began shortly after the opening of the London College, largely through the friendship of Arthur Young and the kindly attitude of the Prime Minister, Pitt, towards its cause, an annual grant that was handsome according to the standards of the time (£1,500) was made to set it on its course; it cannot be claimed that the output displayed in return, with matters conducted as they were then at the College, requited Government in such a way as to encourage it to strive to find some other means of continuing support after the disappearance of the original Board. One of the principal foundation stones of the Ministry of Agriculture in its present form, as is described in a later section, was the Cattle Plague Department which was established in August, 1865, to deal with the serious outbreak of cattle plague or rinderpest, which began at Islington in June, 1865, and by the end of the year had spread throughout the whole of Great Britain. Beginning as a branch of the Home Office, it was transferred to the Privy Council in 1866 and its title changed to the Veterinary Department in 1870, and after the stamping out of the cattle plague in September, 1867, it continued in existence to administer a long series of Contagious Diseases (Animals) Acts. After 1883, the Veterinary Department became the Agricultural Department of the Privy Council, and in 1889 by Act of Parliament a Board of Agriculture was set up. In those "thrifty days," under Mr. Gladstone's régime, the first annual estimate of the net expenses of the Board amounted only to £55,000, so that it can be seen that little was available for making financial provision for veterinary advancement. Soon after the turn of the present century a small annual grant was made to the London College but was earmarked for purposes of research.

Nothing in a way comparable with what could be directly allocated under the more arbitrary systems of government on the continent could therefore have been contributed from public funds to support veterinary advancement that would not conflict with the contemporary constitutional situation. In a later section, a distinguished American contributor also indicates how the situation bears resemblances to that in the United States of America in so far as enterprises are left alone to be encouraged in development through the active sympathies and support they are able to arouse in free Societies rather than as appendages conscribed to State Departments. That that perspective has been here in gradual process of transformation does not call to be dwelt upon.

That the great intellectual resurgence represented by the Renaissance in the 16th century, which saw the great universities reawake, in the tradition of ancient Greece and Rome, to infuse new life into the arts, literature and sciences, left the veterinary world almost entirely unaffected and witnessed it meanwhile degrading to probably the lowest depths it has ever touched in its long history, has been amply commented upon by the historian.*

* The original Odiham Resolutions are published in Arthur Young's *Annals of Agriculture*. They are also all collected in *The Veterinarian*, 1832, 5, 26.

* "In fact," says Leclainche (*Histoire*, 1936, p. 145), "veterinary medicine hardly benefited at all from the surge of the Renaissance." Already it had shown itself to be unable to follow the road opened up for it three centuries earlier by the enlightened monarch Frederick, King of Naples, who stimulated in Southern Italy a premature awakening in learning that is, however, to be traced to Islamic origin. At the University of Salerno, studies were fostered in medicine on a broad comparative basis and the great work of Iordanus Ruffus, which drew upon the texts of the Byzantine hippiatrists, transmitted

(*Concluded at foot of col. 1, page 610.*)

That the great pioneering energy beginning to appear much later, in the course of the 18th century and afterwards, and manifested by new discovery and enterprise in most varied fields and all sorts of directions, was not a mass movement promoted by resurgent intellectualism, is also clearly evident. Those men whose names have been already mentioned as opening up new eras in industry, commerce and agriculture were not the products of the new learning but were for the most part untutored geniuses, and the universities were not concerned with their ways of thought and action. It is true that study of some, at least, of the aspects of human medicine had been fostered at the universities in so far as those aspects conformed to their conceptions of "learning." But it is difficult to see why, with a "craft" that was still regarded as being apart from "learning" like that of human surgery, the universities could find themselves in a position to offer welcome to the veterinary art. William Dick failed to receive any direct support from the University of Edinburgh when he opened his college there in 1823, but nevertheless received generous help from some of the extra-mural teachers. Joseph Goodwin (1786-1845), who had originally studied medicine at Guy's Hospital with Sir Astley Cooper and Coleman, decided, after qualifying in veterinary medicine at the London College, to proceed to Oxford, and, having matriculated, started practice in the city and endeavoured to establish a chair of comparative anatomy in the University; the course of lectures which he delivered was suppressed by the Chancellor.* In 1830, a Professor of Veterinary Surgery was appointed by the University of Glasgow, but was terminated after the migration of the second holder, John Stewart, to Australia, in 1840.† William Youatt (1776-1847), knowing from his early experience how all that pertained to animals other than the horse was almost entirely neglected at the London Veterinary College, opened a private school for the necessary teaching on his own premises in London in 1828, and then, in 1831, obtained permission to deliver his lectures at the newly opened London University (now University College, London, Gower Street). But for the mishap of Youatt's breakdown in health in 1834 this project might well have changed the destinies of the profession. The London University had been opened, in 1824, to provide facilities for a much more liberal and progressive education than was available at the older universities, and it seems that Youatt's classes were well attended and conducted in an inspiring atmosphere. From consultation of the original texts, however, it does not seem that the other teachers there entered into the most eager collaboration. William Percivall, who tried to carry on the teaching after Youatt's breakdown, unfortunately also lost his health soon afterwards, otherwise we might now have witnessed the germ of a vigorous growth of the veterinary art as related to agricultural practice integrated early in this manner within the university system. Nothing of the kind was attempted afterwards for many years.

What has been briefly said about events in general during the critical period preceding the Charter shows therefore that it was one of restless energy and great transformation affecting the whole human economy. Nothing of this kind had happened for many centuries to give fillip to veterinary progress. There were not wanting remarkable men who seized some of the opportunities presented, but unfortunately at the point of vantage there was vested interest and conservatism which barred the way to a mastery of the transforming situation. Hence, it was that the incentive was provided for the organisation of a mass movement to obtain redress and wrest collective mastery over the situation—a phenomenon which contemporaneously was by no means unique on the British stage. It was encouraged, characteristically, also by institutions such as the newly organised Societies which promoted free enterprise and which derived their authority from a rich prevailing civic inspiration. Movements such as these did not arise at the time through the urge of governmental administrative direction. The inspiration to enterprise, moreover, was not an intellectual one deriving in any measure from the recognised seats of learning, such as the universities.

(d) The Animal Plagues: their prevalence and effects; how they were encompassed and the lessons learned therefrom.

However much or little the disastrous animal plagues of the period preceding the establishment of the veterinary schools in Europe during the latter half of the 18th century may have actually determined their foundation, there is hardly any testimony that concern for the losses caused by those plagues directly entered into the motives which prompted the movement to obtain the Charter of Incorporation to set up a recognised veterinary profession in this country in 1844. Those motives were directly actuated by other causes, which can be clearly discerned. Nevertheless the narrative would be far from complete if it did not take into account the important background represented by the previous recurrence of alarming devastations among the domestic animals of the country. These had been on a scale that is now hard to appreciate.

In accomplishing their encompassment, it can be easily shown this day that the formation of a body of trained professional men has repaid the country handsomely for the privileges accorded to it by the bestowal of the Charter. "It seems more than likely," wrote the late Sir F. Smith in 1924, "that if epizootic diseases had not been introduced into this country the veterinary art to-day would be much as it was left by Markham and his followers at the end of the 17th century."* And he then quotes the late Sir George Newman as saying: "Pestilence has ever been the opportunity of medicine." That view, which has also been taken by other historians—we can now better appreciate than at the time when Smith was writing—is almost certainly an over-statement of the position. Historically, it is interesting to note, in view of the present-day preoccupation with foot-and-mouth disease as a major epizootic, that that disease was apparently first introduced into this country in 1839,† the year before the Charter movement was begun. There are records of the occurrence of this disease in Europe since 1763. A perusal of the contemporary documents in regard to the contribution that was made towards its control on its first appearance in this country, however, makes to-day

* Writing in *The Veterinarian* (1845, **18**, 101) on the occasion of this remarkable man's death, Youatt says, "... It was at Oxford, where he matriculated, that Mr. Goodwin first commenced the practice of veterinary medicine; and he occasionally demonstrated the anatomy of the horse, in the reader's chair, until his lectures were found to be too erudite for the taste of the collegians, and were prohibited by the Chancellor of the University ..." As Goodwin's efforts, with those of his son, W. J. Goodwin, in the movement to obtain the 1844 Charter are outstanding Youatt's concluding words merit reproduction:—

"It is now nearly a quarter of a century since Mr. Goodwin earnestly set himself to work to remove what he conceived the grievances of the profession; and he addressed the Governors of the Veterinary College upon the subject of the profession being entirely excluded from the slightest voice in the government of its own interests. He expressed his opinion that it is now full time for some of the members to be chosen to sit at the examining board. To bring the force of his argument more under the notice of the Governors of the College, he made himself a subscriber to the institution; and for this they made a by-law that no veterinary surgeon should in future be allowed to be a subscriber to the institution, and he was in consequence prohibited from attending any general meeting. This will ever be recorded as shameful an act of the authorities of the Veterinary College as it was a worthy one on the part of Mr. Goodwin.

"In his latest moments he gloried in the feeling that the profession had now shaken off [*i.e.*, after the 1844 Charter was obtained] a thraldom which it had tamely borne so long to its detriment. He was the oldest reformer, and was a sincere well-wisher to his profession. He was often heard to lament the causes that had so degraded what might have been a far more respected name than it now is; and to regain which, in the estimation that the title of veterinary surgeon ought to have been considered, will take longer, and cost more than the unworthy conduct of those [Coleman and his friends] who sold it for their own gain can repair in the same time."

† See Smith's *Hist. Vet. Lit.*, 4, 43. The *Veterinarian's* (1830, 3, 600) comments on the announcement of this appointment are historic and prophetic: "Mr. Castley, in his interesting account of the Edinburgh Veterinary School in our number for June, page 305, remarks that 'our art seems to sink beneath the dignity of collegiate science: that there is no room for Mr. Dick's chair within the walls of the great, the proud University of Edinburgh. The elder sister seems to disown the relationship, or, secretly ashamed of the Cinderella, scarcely acknowledges the connection.'

"We have great pleasure in observing that it is not so in every university north of the Tweed. The *Glasgow Courier* of September 22nd, in its account of the meeting of the Trustees of the University in that city, gives the following paragraph: 'Mr. Cheetham was thereafter unanimously elected Professor of Veterinary Surgery.' If our art in the south 'falls so far short of the estimate we formed of it when we first embarked in it,' it is gratifying to observe that in one university, at least, in the north, its importance is recognised. When we consider the number and value of the patients of the veterinary surgeon, and reflect that every gentleman, and every tradesman possessed of competency, will at some period of his life spend a portion of his time in the country, and be possessed of some of these animals, and how pleasant and advantageous to him it will be to have some idea of their nature and structure, and value and general treatment, we are surprised that this has not formed a portion of the system of general education: and sure we are that the important elucidations of physiology and pathology, which must necessarily result from the variations of function and the variations of disease, and the varied treatment of disease in so many animals as those which are included under the name of domestic, and the light which must be reflected on medical science, ought to give, and will ere long give, the veterinary surgeon a chair in every medical school. We trust that the sister universities of the north, and that those also south of the Tweed, will not be slow in following this laudable example. It will be a happy era for our profession when its importance is thus acknowledged and its respectability thus vindicated. Our old school must then reform; the educated and competent practitioner will drive the illiterate and incompetent one out of the field, and the three months' groom and mechanic will no more be heard of."

down through Arab channels, provided at last good texts which could have been usefully built upon by diligent enquirers. Instead of that, the veterinary literature of the succeeding period became on the whole an infamous blend of charlatanry and polypharmacy redeemed only by a few outstanding treatises (such as the Anatomy of Ruini and the works of the Duke of Newcastle in England and Solleysel in France); it is notorious that the works of the most unscrupulous (such as those of Gervase Markham) gained the largest circulation.*

* Smith's *Hist. Vet. Lit.*, 2, 1.

† *The Veterinarian*, 1839, 12, 639, 674.

rather unsavoury reading.* The episode, summarised in a footnote, provides a few valuable lessons the moral of which will not be lost on the profession of to-day.

Not until later, that is, the year 1865, when cattle plague (rinderpest) broke out seriously again after an interval since the last serious introduction of 1745 of nearly 120 years, was the country aroused at last to set up a permanent State organisation to control disease which has steadily grown to the dimensions with which we are now familiar. Parenthetically, it may be said that those experiences of the 1865 outbreaks produced two classic pieces of veterinary literature for the English language: John Gamgee's *The Cattle Plague* (1866), and George Fleming's *Animal Plagues* (1871). These epizootiological treasures alone, without the mass of other evidence available, indicate that there was no reason whatsoever why the intention of some at least of the original promoters of veterinary education in this country, and indeed on the continent, should have allowed teaching on the all-important subject of the contagious diseases and their control to lapse by default for want, at any rate, of a body of sufficiently exact knowledge on that subject. From the early years of the 18th century there had been collected and recorded a quantity of information upon the necessary essentials which, for quality and accuracy, has scarcely been improved upon to the present day. And that, too, strangely, although nothing was then known about the nature of viruses and other agents which are the cause of those diseases. That had to wait until the decade or two that have just passed. The great names associated with the acquisition of that information stand out as Ramazzini, Lancisi, Thomas Bates, Robert Dossie and afterwards John Gamgee and Stewart Stockman. The body of sound epizootiological knowledge built up by this succession of men still stands in need of collation. It was built up almost entirely around their experience with cattle plague, which from time immemorial had periodically ravaged the herds and flocks of Western Europe to an extent which can at the present day be only fully appreciated by those who have had experience in those countries of Asia and Africa where it still prevails. It is noteworthy, in the earlier history, however, that when calamities arose the only country that stood out as being able to find the men to cope successfully with them was Great Britain. The records concerning the plague begin to get exact and trustworthy very shortly after the opening of the 18th century. To give point to the contention made here, we may profitably quote now the following passages from Fleming and reflect upon them: During the great ravages of cattle plague in Western Europe from 1713 onwards "the learned doctor and physician to Pope Clement XI, Giovanni Lancisi, was sent to investigate the nature, and prescribe measures for the suppression of the murderous pest raging among the herds of the Romagna. For the ability displayed by this man, we are indebted for an accurate description of the symptoms and *post-mortem* appearances of the malady, as manifested in that part of the Roman dominions." Those observations, made in 1713, were published in 1715, and the author having gained experience in successful control, published work containing the following statement of the principles of control:—

> "The steps which a wise government should instantly take, whenever (which may Heaven avert!) the pestilence may again appear upon our borders, are these. All roads and by-paths should be carefully guarded, so that no ox or dog be allowed to enter the country. Any animal so entering should be forthwith destroyed and buried. Should the pestilence, however, gain admission, the separation of the sick and healthy must be enforced by decree. *Indeed, in my opinion, by far the safest course is instantly to destroy the animal, and with the pole-axe, so that no infected blood may escape on to the ground*; for, in attempting to cure the diseased animal, the veterinary surgeon may convey the plague to healthy oxen. The healthy cattle must be removed from their former pastures, which must now be regarded as contaminated. The diseased oxen should be kept in stables, to which no one is admitted except the veterinary surgeon or the herdsman. The fountains and vessels used by the animals should be frequently cleaned with quicklime. The clothes of the shepherds also should be fumigated. The dead carcases, from which not one hair is to be removed, must be buried in deep pits; and any saliva or secretions which may drop from them on the way to the pit are to be carefully removed. If any cows are infected, their milk is instantly to be thrown into a hole in the ground; and the severest punishment should be inflicted on those who disobey the order. The passage of all rustics and dogs should be forbidden.
>
> "Such are the means, and the reasons for employing them, which I offer for the purpose both of avoiding and of suppressing the plague." *For in truth, when I reflect upon the difficulties*—the expense, the dangers, and the labours in carrying them out, I confess that I know of no means by which the plague may be more easily, more surely, and more expeditiously suppressed, than by instantly knocking on the head every infected animal, and burying it deeply in the earth." Then in apologising for writing the treatise, he says: "I may be asked of what benefit can this commentary be to posterity, as I have no remedy to offer for the cure of the plague? I answer, of very great benefit; for it is no little thing in human affairs to know what to avoid and what is true—*lucrum etiam in rebus humanis non exigimur est habere certum atque exploratum quod vitemus. . . .*"

Whether or not Lancisi's report was known to him or not cannot be ascertained, but when, in July, 1714, the cattle plague which had been raging during the preceding years on the continent first appeared in a dairy herd at Islington and then spread to the outskirts of the metropolis, Thomas Bates, Surgeon to George I, who was ordered to enquire into it, succeeded, after the application of measures similar to those advocated by Lancisi and almost identical with the official "stamping out" measures of the present day, in eradicating the disease in less than three months.* Reading

(*Concluded at foot of col. 1, page 612.*)

* Summarising, and commenting upon, this episode, Smith (*Hist. Vet. Lit.*, 3, 128) says: "Returning to the year 1839, which saw the introduction of foot-and-mouth disease, we were now to suffer the consequences of Coleman's folly in excluding cattle pathology from the course of instruction. It had been urged on him by John Lawrence before the advent of Youatt, but to no purpose. The result was that not a soul in the kingdom knew the disease by sight or had ever heard its name; similarly a little later with pleuro-pneumonia. As foot-and-mouth disease spread, public alarm increased, and the Royal Agricultural Society asked Sewell [1781-1853, a taciturn man who had hardly ever been outside the College and who had been Coleman's Assistant Professor since 1799 and had that year, *i.e.*, 1839, succeeded Coleman at his death as Head of the College] to prepare a memorandum on the subject, dealing with the symptoms, treatment and method of control of the disease. Sewell's suggestions were submitted to a sub-committee of the Council, of which Youatt was Chairman. The Society issued the Sewell circular with a significant addition of its own. Sewell had dealt with the eruption and its treatment by advising sulphate of copper, setons in the throat or dewlap, blisters and bleeding, calomel for liver cases, and soda and ginger for those showing stomach and bowel disturbances, with the employment of opium and fomentations if pain were present. After this the farmer was told to call in skilled advice if these directions failed. This precious farrago of nonsense omitted the all-essential instruction to separate the sick from the healthy: this the Youatt Committee added. The circular did no good for the farmer and infinite harm to the profession, which felt itself neglected; curiously enough the responsibility was laid on Youatt's shoulders and not Sewell's. Another step taken by the Society was the issue of a circular to farmers and others asking for information regarding the disease. Replies were received in due course, and they were handed to Sewell for report. His report issued in January, 1842, was worthless; he had neither a knowledge of the diseases nor ability to extract the information." This matter is further commented upon by Smith in his life of Youatt (*Hist. Vet. Lit.*, 3, 148). It is clear that Youatt himself was opposed to the terms of the notorious Sewell circular (*Veterinarian*, 1840, 13, 316), but in giving countenance to its issue and popularising generally among the farming community information which he had received largely from members of his own profession he fell into such disfavour at this time that publication of Society reports was withheld from *The Veterinarian*. Contrary to the practice of his colleague W. Percivall, who was careful to write for his own profession only, Youatt had been showing an increasing tendency to embark on a course proved too often to be fraught with danger, namely, to popularise his knowledge among a class only too ready to misuse it for purposes of quackery. The incident was an unfortunate one and might well have gravely damaged the prospects of the Charter, as it did, undoubtedly, the harmony which had been hopefully sought for at the outset, and by Youatt himself especially, between the veterinary profession and such a powerful new Society as the Royal Agricultural Society of England.

That Sewell's capacity for understanding the nature of contagious disease was thoroughly unsound and Youatt's correspondingly sound is testified by the replies given by them in evidence before a Committee of the House of Commons on March 26th, 1838, when questioned upon the causes of the then very prevalent disease of rabies. A reply of Sewell's was: ". . . abuse, over-exertion, bad diet, heat of weather, and all those causes which would induce it in many other animals, will cause hydrophobia in dogs. . . ." Youatt's reply was: "In my opinion rabies is produced by the saliva of a rabid dog, or a rabid animal, usually introduced into the system by means of a bite. That is the sole cause of the disease" (*Veterinarian*, 1838, 11, 618). Youatt's reply could hardly have been improved upon after the lapse of over a hundred years. Coleman's competence and personality shine out in the replies given by him during a previous House of Commons Committee hearing of evidence on the same subject (*Veterinarian*, 1830, 3, 635), one of his replies being: "I have made up my mind on one point, in which many people, however, are of different opinion; that the disease is often produced without contagion." Questioned whether by that he meant spontanously? he replied: "Yes, but when I say spontaneously, I believe that to arise in consequence of the fact of their being exposed to their dung and urine, and to confinement, too much food and too little exercise. I do not believe carrion flesh is capable of producing it, but I think it arises more from being tied up, and exposed to their own dung, and their own urine, and their own breath, and also from want of proper exercise. . . ." This man, whom Fate had ordained to set our infant profession on its feet, continues in this vein, giving abundant corroboration of Smith's judgment that to cover incompetence he was adept at cleverness and dishonesty. There was available abundant published material forthcoming from careful observers and thinkers which, if he had troubled to study it, would have prevented him from perpetrating these follies.

* Fleming's *Animal Plagues* (1871), p. 206.

"Professor Fantonius, writing to Lancisi in 1716 regarding the Cattle Plague, says: 'In former years, in a province of the British Isles, we heard that a deadly plague had sprung suddenly among cattle, which destroyed them very quickly, and truly by no other cause than a recent contagion conveyed by

Bates's short report on this achievement, it would be hard to exaggerate the skill and efficiency displayed by the man, especially bearing in mind the dilatoriness and confusion which occurred during later visitations when his precepts and those of Lancisi were overlooked or forgotten. Long after the foundation of formal veterinary education in this country, nothing whatever was imparted in the teaching which held out the hopes of some of its promoters that a cadre of men would be produced competent to act in the face of calamity in the tradition of Lancisi and Bates.*

When later, in 1745, the country was again invaded, the visitation was not dealt with by any means with the same commendable promptitude and it took twelve years to suppress it. It was productive, however, of much legislation by Government, which was the forerunner of the permanent measures taken later. At that time, the farriers and cowleeches who abounded in the country were considered to be a class so ignorant that nothing could be expected from them in the shape of advice, and so it was that the physicians were either called in by Government or formed committees among themselves to deal with the disease.† They were, however, disposed to temporise for a large part with the situation, by resorting to the hopes of benefit from medicinal treatment instead of taking in hand at once the only measures previously demonstrated to be efficacious by Bates. A few, however, showed remarkable enlightenment, and one of them, writing anonymously, "projected a Board of Animal Health and outlined an organisation for grappling with the most contagious of animal diseases which, had it been adopted, would have placed this country, and especially the farming community, in a position of great strength when Britain was visited by the great outbreak of 1865" (Smith). The physicians showed a reluctance to disclose their identity because of the injury it might do them in their practices if it were to become known that they were associated with the diseases of animals. Such reluctance had not been felt by Bates who, on the other hand, was a surgeon. Further outbreaks are recorded later in the 18th century, in 1769, 1774 and 1799, but they appear to have been quickly extinguished by official measures with the lessons of the disastrous outbreaks of 1745 and onwards still in memory. A remarkable account of the disease and its control was written up by an eminent writer on agricultural subjects, Robert Dossie, in the light of these experiences in 1771,‡ which can still be consulted with profit.

During the years which preceded the opening of the first veterinary school in this country in 1791, the agricultural community and the public had been aroused therefore to a sense of the dire public need for an educated class to ward off calamities of a kind so grave that Government had had to intervene repeatedly with legislation and disburse large sums of public money to avert them. The class who practised among cattle—the cowleeches—as well as the farriers were on the whole so ignorant that nothing could be expected of them, while the physicians, who could have advised competently, regarded the pursuit as beneath their dignity. At this time, however, the surgeons, as already mentioned in a preceding section, could well have taken on the pursuit, and many outstanding ones later on decided in favour of veterinary rather than human work. An early mishap in the appointment of one of their class at the London College who, as already said, was hostile to his own class becoming identified with it, however, debarred this liaison at the very outset.

Much more could have been usefully said here about the contagious diseases especially prevalent at the time, such as glanders, rabies and "rot" in sheep. It is interesting to note that distemper in dogs only first made its appearance towards 1763.* Many of the animal diseases with which we are now familiar, such as tuberculosis, abortion and Johne's disease, were scarcely known. None of these diseases, singly or collectively, however, determined the course of veterinary history in the striking manner which cattle plague had done. For better or worse, however, the disease did not sustain or repeat its menace towards the country after the establishment of veterinary education for three-quarters of a century. If it had done so, it can now be better seen that both Government and influential agriculturists would have had to retain an interest in its development and not allow it to become degenerate, almost to the average standards of the pre-existing farrier class, very shortly after its inauguration. It was the revulsion of feeling among the best practitioners of the veterinary art itself towards this degeneracy, which was the mainspring to the Charter movement. Indirectly, therefore, if not directly, this was brought about to no small degree by the grave menace represented by cattle plague throughout most of the 18th century falling into temporary but prolonged abeyance during the first half of the 19th century.

(e) The Interplay of the Above Factors upon the Course of Events culminating in the Establishment of a Legally Recognised Veterinary Profession with the Obtaining of the Charter of Incorporation in 1844.

(i) The Title Veterinary Surgeon and the Standing of Veterinary Surgeons as a Profession.

The substantive "veterinary" and the adjective "veterinary" had only just been resurrected in Western European languages at the time of the opening of the veterinary schools during the latter half of the 18th century. The first appearance of the word "veterinarian" in English speech was in a book entitled *Pseudodoxia Epidemica*, written in 1646 by the great scholar and physician, Sir Thomas Browne, the author of *Religio medici*. During that time, as we have already seen, the veterinary art in England had sunk to its lowest ebb and, deploring the prevailing ignorance and brutality of the "common farrier," Browne commends the virtues of a better educated individual to the agriculturist, namely a "good veterinarian." Nevertheless, the art continued to be known commonly as Farriery, and in the original Odiham resolutions in 1785 attention is called to the importance of taking measures for the "improvement of farriery." The original prospectus of the London College, dated 1791, also refers to it on its cover as an institution for instruction in "farriery," but inside its pages the term "veterinary physician" is applied to the professor. The plan of instruction there is Sainbel's, who continued to use the same term in his own writings, doubtless impelled to do so in imitation of the current French usage, which has prevailed till the present day *médicin vétérinaire* being used when the substantive *vétérinaire* is not used alone. In the "An Account of the Veterinary College, from its Institution in 1791: London, 1793" (*Veterinarian*, 1931, **4**, 98, 143, 203, 253), which, according to Youatt, is an amended version of the above prospectus written by one of the governors, John Hunter, the "life and soul" of the movement which brought the College into existence, the word "veterinarian" is still used. The following passage from the classic text of this document is worthy here of quotation:—

> ". . . It requires the sacrifice of as many years to become a skilful veterinarian, as to become a skilful physician: the acquisition of the science and the practice of each is a task sufficient to engage one man's life; and the contrary opinion is a portion of that ancient error which, while medicine was regarded as the province of the learned and the few, supposed the veterinary art on a level with the most ordinary capacities. If the veterinarian is free from the embarrassment which the varied and violent influence of the mind on the human structure causes to the physician, he finds an abundant source of trouble and perplexity in the muteness of his subjects, to which the physician is not subject; which renders it essential that the veterinarian should add to his professional knowledge an active and absorbing mind, and a cautious, accurate and penetrating judgment. . . ."

The term "veterinary surgeon" does not appear in the language till later, namely, April, 1796. Sir Frederick Smith has given us a precise account of the circumstances in which it was coined and reproduced the document in which it was first used (*Hist. Roy. Army Vet. Corps*, viii, 39). At that time, as we have

* Professor Dick, for example, when deputed in July, 1865, by the Directors of the Highland Society to London to investigate and report on the Cattle Plague which had broken out there submitted a report in which the following is a representative statement: ". . . From the general symptoms and *post-mortem* appearances, I am of opinion that the disease depends chiefly on atmospheric causes and the diet of the cattle, and may be prevented by attention and occasional changes of diet. When any suspicious case of the kind occurs, I would at once give a dose of purgative medicine to every beast in the herd, say 1 lb. common salt, 1 lb. treacle, and 2 oz. ginger, and this dose might be repeated. . . ." He continues to elaborate on this mediaeval polypharmacy, still holding on to the view propounded by him in a long paper (Occasional Papers, p. 208) entitled "On the Non-Contagious Nature of Epizootic Diseases." Superb teacher of Clinical Veterinary Practice though Dick is proved to have been, he seems—whether, possibly, for that reason or not is hard to say—to have been utterly unable to attune his outlook to that of Epizootiology. John Gamgee, in the transitory rival school at Edinburgh, was perfectly equipped in every respect as a master of this latter subject, but failed to continue his school there, very probably because the strong local demand was for those to engage in Clinical Practice. Judging by the qualities displayed by the best exponents of the two subjects, it would seem that they constitute such different disciplines as can hardly be possessed together in any one individual. At that time, it must be said, things were certainly no better at the London School, an anatomist, of no competence in either subject, being at the head.

† Smith's *Hist. Vet. Lit.*, 2, 4. 48 *et sqq.*

‡ Fleming's *Animal Plagues* (1871), p. 307.

suspected man. They expelled the disease by no other artifice than the slaughter of infected and suspicious cattle.' The approbation of the Professor at the manner in which the disease was got rid of is conveyed in strong terms and he expresses himself to the effect that the English are (or rather were) an energetic and vigilant people (*gens vigil ac strenua*), who exhibited wonderful courage and devotion during the severe ordeal. Since that time this example of wisdom and energy has been frequently alluded to, and nations who are always threatened with this plague have on many occasions preserved themselves from its ravages by acting as suggested by Dr. Bates."

* Fleming's *Animal Plagues*, p. 408.

already noted, Surgeons still belonged to a different corporation from the rigidly exclusive one of the Physicians, and the Surgeons or Surgeon-Apothecaries (because the surgeon was not debarred from qualifying with the Society of Apothecaries) were employed in considerable numbers in the Army, holding commissioned rank there, and they had often extended their attentions to the horses. War with France having been declared again in 1793, that is shortly after the opening of the London College in 1791, and before the appointment of the young surgeon, Coleman, as Professor there in 1794, following Sainbel's death in the preceding year, the situation was such as is disclosed in the historic words of the above-mentioned Report of the standing "Committee of General Officers," which sat in London and periodically dealt with all questions of Army organisation:—

> "The Board having taken into consideration the heavy loss of horses continually accruing to the Cavalry from the total ignorance of those who have at present medical care of them, as well as from the very inadequate allowance made for that Department, which precludes all possibility of procuring persons better skilled in the knowledge of Farriery, are of opinion that the Veterinary (in the original "Vertinary") College may afford the means of great improvement in this essential part of service, and that a proper pecuniary compensation given to persons taken from that seminary to be attached to each Regiment of Cavalry, will be a most advisable measure to adopt and would ultimately prove a considerable saving to the public. The Board, therefore, begs leave to suggest that the *Veterinary Surgeon* (our italics) to be attached to each Regiment of Cavalry should receive the Pay and Warrant of a Quarter Master, and that he be furnished with a necessary chest of instruments, as also with a chest of medicines at such stated periods as shall be deemed expedient. . . ."

The Report then goes on to say that each Cavalry Regiment in need of a Veterinary Surgeon shall be allowed one-half of the pay for the subsistence of each student sent to the College for training, the Governors having agreed to defray the expenses for board, lodging, and instruction for six pupils at a time.

> "But," the Report continues, "as the pupils to be educated in the College will probably occupy near three years in their studies (*vide supra*, 'An Account of the Veterinary College, London, from its Institution in 1791'), the Regiments of Cavalry cannot be supplied for many years with a sufficient number of Veterinary Surgeons from the Fund. . . ."

Smith rightly describes the above as "an epoch-making report," though he had in mind then only its effects on the destinies of the Army Veterinary Service. It was fraught with "epoch-making" consequences so far as we are now concerned for at least three different reasons:—

First, the Board in compromising the difficulty over the choice of a special title to distinguish the special class of men to be recruited on a level of education equal with that of the Surgeons and much above that of the common Farrier, coined the term *Veterinary* Surgeon, to distinguish the holder from the Surgeon; this term later quickly got taken up by the College graduates who remained in civil life, and in the early decades of the 19th century, with the rapid rise of the great horse practices in London and other large towns, it became fixed in the public mind with the work of a highly specialised class of practitioners of the veterinary art. It was thus the term chosen as a matter of course in the drafting of the 1844 Charter, and has since become the legally recognised name of the holder of the diploma of the Royal College.

Secondly, the war with France continuing from 1793, except for the brief spell after the Treaty of Amiens, until 1815, and agriculture experiencing during that time a boom period of prosperity, with no incursions of serious livestock plagues to upset it, the country, as we can now so well appreciate, was more gravely preoccupied with issues of such relative magnitude that the subject of veterinary education, in its particular relation to agriculture, looming large, as it had been, in the public mind before the advent of war, must needs take a place subsidiary to the readjustment called for in it to face the country's most imminent perils as disclosed in the above Report. The temptation was therefore strong for Coleman, having had no previous experience himself in any class of veterinary work, and bereft then and during the following years of the strong supervision from the agricultural interest that had existed at the foundation of the College, and the disappearance of all control from Government with the abolition of the original Board of Agriculture in 1822, to bring about the state of early degradation in the whole outlook of the embryo profession, arising from the fact that, not merely as a temporary measure, but as a permanent one (Smith's *Hist. R.A.V.C.*, pp. 41, 42), he "lowered the standard of professional education to meet an emergency" and "stuffed the Army with canaille." The tragedy for the profession at this stage was, as the Gamgees wrote many years later, that at a time of grave national emergency, when the country was throwing up men of great genius as statesmen, sailors and soldiers, to meet what were the gravest forms of emergency, the veterinary art had to sink well down in the scale of rival attentions of the public and became content to be consigned to the care of an indiscriminately chosen foster parent no better endowed than a Coleman—his friend and protector, the eminent Surgeon, Sir Astley Cooper, Bart., in virtue of his position as Chairman of the "Medical Examining Committee" of the College, remaining throughout his life behind him as the real "ruler of the veterinary profession."

Thirdly, the original promoters of veterinary education in this country certainly had had no intention that the class of man to be turned out should be limited in his competence and restricted in his employment to what is connoted by the term Veterinary Surgeon in the narrow literal sense rather than in the formal legal sense in which it became fixed in its use later. Having studied the texts of the period we find that no more faithful summary of the situation as it had come about in 1833, that is 42 years after the foundation of veterinary education and 17 years after Waterloo, has ever been recorded than that given by William Youatt (1796-1847). It is here reproduced in honour of that "gentle, amiable man of great benevolence and humanity" to whom the movement owes so much, that culminated in the Magna Charta which emancipated us from the thraldom into which the profession had by then degraded. The term "veterinary surgeon," however, in the literal sense, as a descriptive title, it may be said, did not commend itself at once to the more erudite practitioners of the veterinary art. The Percivalls, father and son, before they were joined as they were later by Youatt, had decided on the term *The Veterinarian* as the best title of the journal they launched in 1828, which was destined to play such an important part for many years as a guide and forum for the profession. The massive classical scholar and prolific veterinary writer, Bracy Clark, when he brought out, with F. C. Cherry, another journal of "reform" in the same year as *The Veterinarian*, decided first on the title "*The Farrier and Naturalist*," later changing it during the brief three years of its existence to "*The Hippiatrist*"—a name which to the historian and classicist can be readily perceived to be far more elegant and of greater respectability in regard to its origins than either "veterinarian" or "veterinary surgeon."

". . . The veterinary profession in England," says Youatt (*Veterinarian*, 1833, **6**, 182), "owes its origin to agriculturists. The corner stones were those memorable resolutions of the Odiham Society, in July, 1785: 'Resolved, that farriery is a most useful science, and intimately connected with the interests of agriculture. That its improvement, established on a study of the anatomy, diseases and care of animals, particularly of horses, cows and sheep, will be an essential benefit to agriculture; and that the Society will consult the good of the community, by encouraging such means as are likely to produce the study of farriery upon rational and scientific principles.' The building [of the London College] seemed to have been completed by this equally memorable communication of the Veterinary College to the Odiham Society, bearing date February 18th, 1790, stating that 'they are engaged on the reformation and improvement of farriery, and the treatment of cattle in general.' Strange to say! this writing was scarcely dried ere *the control of the Odiham Society was shaken off*: and this institution, which was to perfect 'the treatment of cattle in general,' became, *under a committee of professional* men," [the surgeons and physicians dominated by Coleman's powerful friend and mentor, the eminent surgeon, *Sir Astley Cooper*—"the first surgeon in Europe" (*Veterinarian*, 1836, **9**, 168) and "*the foe to veterinary improvement*" (*Veterinarian*, 1833, **6**, 103)] "a mere school for horse knowledge."*

* Commenting in an early editorial on the degradation at the London College, Youatt writes: "We have known the country barber, disdaining longer to mow the stubble on his neighbour's chin; the tailor and the dressmaker working at their trade until lecture time, and again at a late hour of the night; the mercer, who at ten o'clock in the morning threw by his yard, and rolled up his ribands, and started for St. Pancras, and three o'clock in the afternoon was again simpering over his silks and frippery;—we have known these persons, who could have no previous knowledge of the horse, and who had not time to acquire it afterwards to any important degree, in five or six months applying for the diploma, and obtaining it without difficulty.

"Here is the main root and source of our degradation. When men thus incompetent, and whose incompetency is manifest to the first groom or sportsman with whom they come in contact, are allowed to assume the title of veterinary surgeons, although they may constitute, and we trust they do, only a contemptible minority of the profession, yet they bring on it undeserved and indelible disgrace. If *some* veterinarians are thus grossly ignorant, what security is there that any are skilful?

"But how is this? In what manner do these five-month ignoramuses contrive to obtain that diploma, which, bearing the signature of honourable men, ought to be the pledge of industry, talent, and worth?

"It arises from the faulty constitution of the Medical Examining Committee. They are, with two exceptions [*i.e.*, the Professor (Coleman) and the Assistant Professor (Sewell)], *human* surgeons or physicians—most justly respected in their own profession, but totally ignorant of the practical part of our's."—*The Veterinarian*, 1828, **1**, 409.

"The Highland Society of Scotland, feeling, in the language of Sir John Hope at their last (1832) meeting, that while 'it was very proper for them as a body, and as individuals, to promote the amelioration of the breeds of their different descriptions of cattle and other stock, if they did not besides take the means of preserving the health of stock, they did less than their duty,' founded (1823) a school of veterinary instruction, embracing all the legitimate objects of the veterinarian's care; or, at least, they contributed most zealously to the formation of that school, and appointed the professor of it lecturer to themselves; and, the Society *continuing to be connected with that school, it continues to embrace* (what the known character of the Professor [William Dick] would otherwise have secured to it), *adequate instruction with regard to the diseases of all domesticated animals.*"

"What is the consequence of this?—why, that the pupils of that school, being known to possess, generally speaking, a sufficient knowledge of the whole of their profession, receive . . . 'the amplest confidence of their employers; and the illiterate farrier and cowleech, with his empirical nostrums, are driven from the field.'"

"There is scarcely a dairy or distillery in Scotland, where many cows are kept or oxen fattened, the medical treatment of which is not superintended by a veterinary surgeon; and the director of one of them told us, in the last autumn, that they had found their interest in so doing. There is scarcely a district agricultural society that has not its regularly attached veterinary surgeon; implying in the appointment the kind of knowledge which he possessed, and binding him to the diligent study and practice of those branches of his profession. On the other hand, in the metropolis of England, although a veterinary man is attached to most large horse establishments, we know not the dairy or the distillery where he is systematically the medical adviser; and we do know that the aggregate practice of all the veterinary surgeons on the twelve thousand dairy cows of the metropolis would not afford a decent subsistence for one family."

"In the country, too, the veterinary surgeon who has proved that he understands the diseases of cattle, is perhaps, after a somewhat long trial, freely employed; but until he has given this proof, the cowleech is resorted to, ten to one sooner, because it is imagined that the latter may know something, while it is feared or believed that the former knows nothing."

"Such is the bearing, the cruel bearing of things on the reputation and emolument of the veterinary practitioner; and we are inclined to think that the bearing is still more injurious on the interests of the agriculturist."

Youatt then recommends the friendly agriculturist (W. Clarke) who had written to his journal complaining of the situation which had arisen, as Youatt explains, through the above circumstances, to patronise the veterinary surgeon in his neighbourhood and endeavour to obtain for him the honorary title of veterinary surgeon to any district agricultural society to which his correspondent may belong. "And if the great societies," he then adds, "the Bath and West of England Society and the Smithfield Club, were to appoint their veterinary surgeons, or to institute lectureships, or patronise schools devoted to instruction in the medical treatment of cattle and sheep, a new and irresistible impetus would be given to this most important branch of veterinary study; the old school would return to that system from which it ought never to have been permitted to deviate at all. The veterinary profession would be put on its proper basis, and the country would be greatly benefited."

When later, however, a great agricultural society, the present Royal Agricultural Society of England, came into being, although the support given to the institution of teaching in Cattle Pathology at the London College owes its beginning in the main to the support received from that Society, the general body of veterinary practitioners, in its efforts to organise itself as a profession, was advised "to fight its own battle."

Coleman's own outlook, on the other hand, towards the situation has, we hope, received fitting vindication in what has already been written here in our attempt to relate it to the rapidly changing social and economic situation of that critical period in English history. When, towards 1827, the need for veterinary reform became clamant among certificated graduates of the London College, Coleman had reached 62 years of age and no radical change in outlook could normally be expected in him to meet the transformed situation. Besides, since the 1793-1815 war, agriculture entered into such a period of economic depression and fluctuations besides revolution in method that for several years, in the continued absence of incursions of the graver epizootics, it was little concerned with promoting the veterinary art in its own interest. Coleman, for example, was never confronted with foot-and-mouth disease, which did not appear in this country till the year of his death. Backed by lifelong friendship with the most eminent surgeons and physicians of his day, headed by his friend, Sir Astley Cooper, who constituted the Examining Committee of the College and had a controlling voice on the Board of Governors, there was nothing in the clamour for reform that was likely to shake him from the conservative outlook of an era that, had he known it, was for ever passing away. This outlook of a passing era is well depicted in the following passage (*Veterinarian*, 1829, **2**, 203) selected from a speech delivered by him (from the chair) at the first Anniversary Dinner of Veterinary Surgeons, held on April 22nd, 1829. The passage, moreover, needless to say, portrays the captivating charm of a gentleman of the Regency period:—

> "Gentlemen (said he), I rise as Professor of the College to return thanks for the honour you have done the institution, and for the honour you have done me in proposing this toast; as well as for the manner you have received and drunk it. I had the honour to be invited here to-day, and I felt it my duty, therefore, to come to meet my fellow-members in the veterinary art; my brethren, or rather, I should say, my children [*turning with a smile towards some of the oldest members*], although some of them be rather ancient children [*laughter*]; but nevertheless, most of them, I believe, have done me the honour of attending my lectures. . . .
>
> "There are two questions which seem particularly to agitate the veterinary world. One of these relates to the non-admission of veterinary surgeons into the medical committee of the College; and the other, to the non-admission of veterinary surgeons as subscribers to the Veterinary College." Then he proceeds to deal separately with these two questions, and explaining the reluctance of the surgeons and physicians to have a small proportion of veterinary surgeons included with them in the Examination Committee, and the propriety of the suggestion put forward by them to form, in addition to their Medical Committee, a separate Examination Committee composed of veterinary surgeons only, he adds: "Gentlemen, I am a great advocate for rank, and the importance attached to rank and respectability. I think we should study to know ourselves; and we ought not to put a higher stamp upon our characters or profession than the public are willing to give us; otherwise we shall subject ourselves to some degree of ridicule. In my opinion, we never can rank with the medical profession, further than as younger sons, or as junior brethren. In the first place, the Government of your country has fixed what shall be your rank. The Government of your country has given you commissions in the Army, and thus made you gentlemen, and given you a certain degree of rank; and I take some degree of pride myself for having been, partly at least, instrumental in getting this brought about. You could not formerly assume the rank; and it does not now exist with respect to all veterinary surgeons in Europe. Veterinary surgeons, however, have not the same rank as surgeons in the Army: there is a shade of difference between surgeons in the Army and veterinary surgeons, in point of rank. Now, if we look upon this impartially, I cannot help thinking it is well founded; for what is it that makes the difference of rank and class in society? They who have been obliged to spend the most money in their education; those professions that require the greatest talent, will receive superior consideration and respect; and, after all, they will obtain the highest condition and rank who get the most money—the best means to support that rank. Therefore the profession of human surgery will always be superior to a profession where the education is less expensive, where the emoluments are less, and where the difficulties of learning it are fewer. . . ."

Both Coleman and Youatt were speaking or writing during a period, 1815-1832, that is between Waterloo and the great Reform Act, which saw the dethronement of an oligarchy whose ascendancy was typified in the utterances of the former and whose replacement by a class, with a commercial and utilitarian outlook, was finding expression in the different language of the latter. As if the existing representative form of government of the country, it has been said by the general historian, was not in itself capable of transforming itself quickly enough to represent the transforming scene, enterprise, not to be thwarted in its urge to expansion, was again, as in Tudor times, having recourse to the seeking of privileges direct from the Sovereign by Royal Charter. Though 40 years before, when the London College had sought a Charter, it had been peremptorily refused by the Lord Chancellor (Lord Eldon), as an attempt (it was said by Youatt) to secure a monopoly, the times had now changed, with the Chartist Movement as its most evident general public expression, so that as a general phenomenon bodies of people which comprised, among many others, those who practised both the medical and the veterinary arts were seeking special privileges to protect themselves and expand their endeavours. Already comprising three different ancient corporations the medical practitioners did not obtain the privileges sought for until the passing of the Medical Act of 1858. The practitioners of the veterinary art needed *as a necessary first step* towards securing the full legal privileges that could only be conferred upon them by Act of Parliament to become established as a corporation. That step was achieved by the Charter of 1844, but *the next step* which it was hoped would soon be secured with the passing of an Act of Parliament was unfortunately not achieved, for several reasons that are now well understood but can here only be briefly touched upon, until 1881. Coinciding with the beginning of the Charter Movement among the veterinary practitioners also was the publication of the famous Durham Report, which with the lessons dearly learned after the secession of the American colonies still in mind, gave formal expression to what came to be looked upon as the settled British tradition that, in effect, those who stand to suffer most from the operations of laws which more particularly affect themselves only are to be

expected to be most deeply interested in the framing of ones that shall be good. This much needs to be said to explain, as it does, the delay caused in large part by inexperience in such matters, that occurred between the Charter and the Act.

Adverting, therefore, to the heading of this section, the title of Veterinary Surgeon and the Veterinary Profession, it is felt that an exposition of the benefits that accrued immediately from the obtainment of the Charter itself can be most fittingly described in the words used by one of the chief actors.

In the opening passages of a paper, largely devoted to the exposition of measures to be taken *for the next step*, delivered at the First British Veterinary Congress in May, 1867 (*Veterinarian*, 1867, **40**, 479), recounting the change in situation which had been brought about by the 1844 Charter, T. W. Mayer, whom we can now discern as its chief architect, said:—

"Before . . . entering upon our theme, allow me to direct your attention for a few moments to the position of the veterinary practitioners of this kingdom prior to our incorporation. We shall then be able to answer a question that I often hear asked, *viz.*, What good has the Charter done us? and also more fully appreciate the objects it is contemplated to obtain.

"Before the Charter was obtained the veterinary practitioner was not recognised by law. The only distinction by which he was known was that of 'farrier,' conferred upon him by the Charter of King Henry VIII, and restricted to the City of London and the suburbs thereof. Consequently (prior to the existence of a veterinary school in London) this term was the only one in use in this kingdom by which the horse doctor was known or described.

"After, however, the establishment (in the year 1791) of the Royal Veterinary College, the title of veterinary surgeon was assumed by those who, having been admitted as pupils within its walls, and passing an examination, received a certificate of qualification to practise the veterinary art. Subsequently, another school was established in Edinburgh, and the certificated pupils of that establishment likewise practised as veterinary surgeons.

"In making use of the word *assumed*, I do not mean it in any offensive sense, but simply because it more distinctly points out the impression I wish to convey, *viz.*, that prior to the attainment of the Charter there was in this country no such person legally known as a veterinary surgeon (the commissioned officers of Her Majesty's service excepted).

'The individual whose qualification to practise the veterinary art was derived from traditional observations, books, and experience contained in manuscript books . . . had an equal right (if he elected to do so) to call himself veterinary surgeon with those who held the certificate of the Veterinary College of London or Edinburgh.

"By the Act of Her Most Gracious Majesty, the whole of the certificated members of those schools were incorporated for certain purposes:—

> *'They were solely and exclusively, of all other persons whomsoever, to be deemed, and taken, and recognised to be members of the profession, and professors of the said art, and individually known as Veterinary Surgeons.'*

"By this clause alone, Veterinary Science was (if we may use the expression) elevated from the slough in which she had previously struggled, and was given a legal foundation upon which she could build for herself a professional reputation.

"If the Charter had conferred upon us no other privilege than this, expressed in language so clear and forcible, I am ready to maintain that its obtainment was of the greatest importance. How much more is its value increased by the other provisions it contains. Gentlemen, in these days it ought to be considered of some advantage to be thought able, and allowed to conduct your own affairs, without the interruption of those whose influence would perhaps be exercised to meddle in and muddle everything. It is desirable to make our own laws, control our own property, elect our own officers and servants, regulate the examinations, and appoint the examiners. In short, I have no hesitation in saying that the statutes therein contained have been framed for the good of the body, politic and corporate, and all, when properly and carefully carried out, are calculated to promote the common welfare of the profession. . . ."

* * * * *

A Brief Narrative of the Charter Episode: The Chief Actors

(1) *The Origins of the Early Reform Movement preceding the Charter Episode: the Astley Cooper-Coleman Domination.*

Although the Charter Movement proper did not get under way until late in the year 1840, there had been within the veterinary profession for several years previously several attempts at "veterinary reform." These had arisen mainly from a sense of grievance at what were felt to be grave abuses in the conduct of the London Veterinary College. The well conceived designs of the original founders of the institution had become thwarted to such an extent that the class of man, it was widely and deeply felt, turned out after the training there was, on the whole, not much better than the "common farrier" of the former period. No attempt was made at the College to teach anything upon the treatment of the diseases of animals other than the horse. The well planned original course extending over three years was shortened to almost as many months. The "diploma" then obtained was thought with much solid reason on the other hand, by its donors, to bear weight among the public in so far as it contained the signatures of a number of physicians and surgeons of great eminence in the medical world. These men alone constituted the "Medical Examining Committee," who granted the diploma. Towering above them was the powerful figure of the surgeon, Sir Astley Cooper, Bart., Coleman's intimate friend and professional colleague since youth. From the authority that he wielded from that position, as head of the Examining Committee, therefore, Astley Cooper came to be looked upon for nearly half a century, that is, from the date of Coleman's appointment to the College in 1794 until his death in 1841 (Coleman having predeceased him only in 1839) as the real "ruler of the veterinary profession." These two men, Cooper and Coleman, were being entrusted—though it was probably not realised by them or the public at the time—with the nursing of a profession during its infancy and, moreover, during an exceptionally difficult period of world turmoil caused by a long war followed by a drastic upheaval such as had never before been witnessed in the social and economic order. How it fell to them, fortuitously, to discharge that trust and how in time they came, unwittingly, to betray it, can be discerned more clearly in the light of what has now been touched upon in the preceding short analyses.

In summary, the processes were as follows.

Beginning in the year 1785 with the famous Odiham resolutions, the movement for the establishment of veterinary education in this country was in its origin promoted by the agricultural interest, deeply concerned as that interest was with the losses caused among farm livestock especially by epizootic diseases, of which cattle plague was the most serious, though by no means the only serious, menace.

Shortly before that movement for starting veterinary education had got properly under way, however, other interests impinged upon it, and particularly an intellectual one, concerned with the enormous possibilities of comparative study, of which the outstanding genius was the great figure of John Hunter, the surgeon-naturalist, with whom were associated other distinguished surgeons, in especial Cline, an eminent surgical teacher at Guy's and St. Thomas's Hospitals. Arthur Young and Granville Penn may be discerned as leading intellectuals in the agricultural movement, and not serious men of affairs. The agricultural movement was then becoming disturbed somewhat by impending war and acquiesced, largely on the advice of these two men, in the plan of education put forward to them by the young French veterinary visitor, Sainbel, for starting veterinary education after placing that plan for examination in the first place before the above eminent surgeon-naturalists, who, as can now be readily seen, were not necessarily competent to adjudge the essentially practical agricultural problem. The Odiham Society therefore dropped its original plan to send three specially selected young men to Alfort for study and acceded to the Sainbel plan. Why they need have done so, seeing that in the person of William Moorcroft there was also in the country a brilliant young man who had taken pains to educate himself, on Hunter's advice, at his own expense at Lyons, is hard to say. Moorcroft's subsequent career stamps him at any rate as not only the first man but perhaps one of the most outstanding men, in this country to have ever undergone a special veterinary training.

As Youatt wrote in *The Veterinarian* many years afterwards, the Sainbel appointment in 1791 was the initial great mistake, or to use his own words "an irreparable error." The man had nothing to equip him for the task except some acute horse knowledge, though he might well perhaps have adapted himself to the wider field afterwards. His Gallic temperament, which soon made itself apparent, also does not appear to have destined him for the confidence of British interests. His teaching was confined to the horse, and though he died (apparently from glanders) within two years of his appointment the restriction of the teaching during that brief period to the horse was destined later to have enormous consequences.

After Sainbel's death there was some difficulty in filling the appointment. The Institution was under a load of debt: war with France had been declared in the preceding year, and so the agricultural interest was preoccupied with other matters. Horse practice in the larger towns, for luxury and commercial purposes,

was just beginning to assume great importance. Moorcroft had begun as a pioneer in this kind of practice in Oxford Street and so great was his success that he was unwilling to relinquish it entirely for the vacant College appointment when it was offered to him. John Hunter, also, unfortunately had died in the meantime, and so his associates, in particular Cline, Crawford and Forsdyce, after some months while the College was without a head, alighted on the expedient to appoint Moorcroft to the post, in a consultative capacity, to visit it for two hours on three days of the week, selecting as a resident colleague a young surgeon, Edward Coleman, a former pupil of Cline's contemporaneously with Astley Cooper and other young men who were soon to become distinguished in the surgical world. Coleman had done some physiological work, on respiration and the eye, using horses' eyes for the work, which seemed to commend him for the appointment, but, otherwise, he admitted that he had everything to learn about veterinary work. Throughout life, he remained a complete stranger to actual veterinary practice. It is clear, as Smith has pointed out, that the arrangement could not possibly work, and Moorcroft, who though gifted exceptionally as a scholar and experimentalist was now also excelling as a practitioner, soon abandoned a personal association that must have proved irksome from the very outset. Coleman was then left in sole and undisputed charge, powerfully backed by his own professional friends, Astley Cooper and others, who constituted the Examination Committee that was later appointed.

Within two years of his appointment, namely in 1796, the event took place already referred to that was destined to be epoch-making in the history of the profession, namely the action taken by the Army to secure recruits for attending to the veterinary needs of cavalry horses. Confronted with the problem of supplying recruits speedily enough as an emergency measure and himself unfitted at that time to carry out any teaching beyond what was begun by Sainbel and was restricted to the horse, and further unable to secure young medical men for recruitment on condition of granting them special concessions, Coleman fell to meeting the situation in the way that his own capabilities and the exigencies of the moment conspired together most readily to decide him. He supplied the demand that was most urgently required by shortening the original three years' course* and admitting such recruits for training as could be most easily obtained, whatever their previous accomplishments were and whatever the social strata they came from, his chief prejudice being directed against the entry of medical men. Much credit has been given to him for having obtained commissioned rank for these recruits, and thus raised the veterinary profession to the status of "gentlemen." As Smith has shown, and it can be easily proved by still more abundant contemporary evidence, that this was directly motivated by him, however, is largely an illusion. Neither Astley Cooper nor Coleman were slow during their long régime to take full advantage of this popular illusion, and both rose steadily to power and riches. On the one hand, human surgery, long held to be a craft beneath the dignity of men of learning and fit only to be practised by barbers as a side-line to their occupation, was being exalted in the popular imagination after having passed through the hands of such distinguished and broad-minded exponents as Hunter and Cline. Their successors, like Astley Cooper, quickly capitalised the situation, their names (as William Percivall so well pointed out in a classic open letter) being given added renown and advertisement through appearing on widely circulated "diplomas," while the work of examining men for such diplomas for little direct remuneration proclaimed to the public their apparent altruism. Coleman, while he was entitled to pocket all students' fees, retained his hold over recruitment to the Army and sale of drugs to the cavalry, and was tempted to practices which by modern standards would hardly be condoned. but, it has always to be remembered, were not much out of conformity with the standards of the time.

From the date of Coleman's appointment in 1794 therefore until well after the end of the long European war, in 1815, there was, as we can now better judge living in the aftermath of another war, very little to disturb the equanimity of the Astley Cooper-Coleman domination. When disturbance to it became threatening, beginning about 1825 and mounting to a crescendo in 1829, they were on a strong enough footing to meet the early reform movement almost unshaken, coming out of it afterwards nearly, but not completely, unscathed.* Instead, in that first assault it was the reforming movement that broke itself when it came up against them.

(2) *The Early Reform Movement: Joseph Goodwin* (1786-1845), *the "Father of Veterinary Reform."*

The movement for veterinary reform was not begun, as is sometimes believed, by the founding simultaneously of the two veterinary periodicals, *The Farrier and Naturalist* (better known by its later name, *The Hippiatrist*) and *The Veterinarian* in 1828. The movement had already begun a few years previously, and was directed almost entirely towards securing reform in what had by then, it was felt, become an anomaly, namely the exclusion of men with veterinary qualifications and with experience in actual veterinary practice from the Examination Committee and, what was felt almost as keenly, the exclusion of all such men from becoming "Subscribers" to the College and thus from any voice in the management of the College. If the profession (using the word now merely in a literary sense, because as already shown, in the strict legal sense there was no "profession" until it was created by the Charter of 1844) could have a voice in either place something could be done to rescue it from the degraded state into which it had fallen through the certification of men as fitted to practise who in large part brought upon it disgrace. The school over which Coleman presided and which Astley Cooper virtually controlled, had every moral claim, it was contended, as was the intention of its founders, to be looked upon as "a national institution," and a "College." Nevertheless, in the eyes of the leading veterinary men of the time it had become in its management "a private institution," and in the execution of its functions a sort of "joint-stock company."

Early in 1827, the sense of grievance steadily spreading among all the more respectable elements in the profession had culminated in several meetings between Joseph Goodwin and F. C. Cherry on the one hand, and Coleman on the other, in which proposals for reform were put forward which appeared to evoke the complete concurrence of the last-named. In short, they amounted mainly to limiting the Examining Committee to twelve members, men with veterinary qualifications becoming eligible to serve as members as and when vacancies arose until one-third of the members were veterinary men.†

Cooper and Coleman met this request by executing an extremely adroit manoeuvre. They did not resist it. It was, as can well be seen, far too reasonable to bring upon themselves the possibility of odium through directly repelling it or even by appearing to be out of sympathy with its intentions. They professed, therefore, to be in the fullest sympathy with it, but urged that in many ways it would be to the advantage of the profession not to be restricted to representation by three members only on the Examining Committee. The better plan, they stressed, would be to have a separate Veterinary Examination Committee, composed of a larger number, namely six, veterinary practitioners, before whom the candidate for the Diploma should appear before he came up before the Medical Examining Committee which ought to remain composed as heretofore exclusively of the surgeons and physicians. Much argument was adduced in an attempt to carry persuasion that the members of the "old" Committee might feel that they could no longer proffer their "services" if they had to mix intimately with members of the suggested "new" Committee. The plea was developed by Coleman with consummate advocacy before meetings of the whole profession at Freemason's Tavern, London, in April, 1827,‡ the outcome of which was the presentation of a Memorial to the Governors embodying the grievances of the profession, yielding to the advice tendered to them by Coleman and endorsed by the Examining Committee (of which Astley Cooper was Chairman) by redrafting the portion of the text of that Memorial referring to the examinations in the following terms:—

* Recently an impression has gained currency that the original three years' course was shortened because of rivalry between the English and Scottish schools. This is an error. The Scottish school was not opened until much later, in 1823. The circumstances of the shortening have been faithfully summarised by Smith (*Hist. Vet. Lit.*, 3, 15; *Hist. Roy. Army Vet. Corps*, 39-43) and as given there can be readily corroborated by a wealth of contemporary evidence. No shortening took place after the drastic one originally made by Coleman to as little as three months; but after the "reforming movement" had made itself felt in the profession in 1829 he was induced to lengthen it, nominally at any rate, to 12 months. Shortly after his death, in 1839, it was extended to 18 months. Doubtless, subsequent to the 1844 Charter, the secession of Dick after reflecting on his return to Scotland that his acquiescence to signing the Charter had largely alienated the powerful support he had previously received from the Highland Society and the very tactless publication of the report on his school by the R.C.V.S. inspection committee headed by Spooner, who was chief of the London School, working, as that did, on "an excitable nature," together with the unseemly conduct of Coleman's successors at the London School (Sewell, Spooner and Simonds) in their persistent attempts to regain lost dominance by undermining the Charter provisions, led to delay in lengthening the course again to its original three years' span, which did not occur until 1876.

* One result was that Coleman lost many of his Army perquisites, such as the position referred to in contemporary literature of "Druggist-General to the Cavalry and was induced to lengthen the course to one year."

† *Veterinarian*, 1829, 2, 249.

‡ *Ibid.*, 190, 199, 214, 225, 233. This meeting seems to have been got together largely through the initiative of two practitioners, J. H. Langworthy of London (*ibid.*, 66, 136), W. F. Quick (*ibid.*, 137).

"The veterinary surgeons, who are best qualified to judge of the competency of the candidate for a veterinary diploma, have not yet, with the exception of the Professor and Assistant Professor, been admitted to the examiners' board, although in every other country that board consists of veterinarians alone. Your memorialists, therefore, pray that you would, by admitting a certain number of veterinary practitioners residing in the metropolis or within ten miles thereof, and elected by the profession generally (to) constitute an examining committee, qualified to decide justly and impartially.

"That although your memorialists do, in their own names and that of their brother practitioners, and of all future veterinary surgeons, avow and maintain their right and competence to form a part and portion of the present board of examiners, yet, aware of much averseness in that board to admit them (an averseness which sufficiently elucidates their present state of degradation), they are unwilling to sacrifice to a point of etiquette the advantage accruing to the profession from their being connected with the examination; and propose that, for the present, six of their number residing in the metropolis and its environs, and elected by the profession generally, shall, with the Professor and Assistant Professor, constitute a separate committee, before whom the veterinary pupil shall first appear for examination, and whose testimony and competence shall be obtained ere such pupil can obtain his diploma.

"That lamenting the strangely short and inadequate period of attendance at the College, which has hitherto been required from the veterinary pupil, your memorialists earnestly unite their prayer to that which they understand will be the recommendation of the present examining committee, that *every* pupil shall remain at least twelve months at the College; and that even a longer period of study shall be required from him who has not been apprenticed to, or educated under, a veterinary surgeon or practitioner. . . ."

At the annual meeting of governors and subscribers held on May 21st, 1829, to which the Memorial was submitted, its terms were, however, *rejected*.*

Following this, a general meeting of the profession was again summoned for July 8th, 1829, to hear Coleman upon the reasons which had induced the governors to reject the terms of the memorial. Then he pleaded with them that the governors had put forward objections which had never occurred to him when he had counselled the profession to have recourse to the expedient he and the existing Medical Examining Committee had persuaded its members to adopt. In the indignation which ensued during debate it is noteworthy that the first suggestion of a Charter for the whole profession emerged as the only workable solution of the impasse. This arose through a proposition being put forward by Cherry that the profession itself should select an examining committee to examine candidates independently of the College authorities, when James Child† (1799-1881), of Hackney, contended, in words that afterwards read prophetic, that such action would have no weight whatever unless the profession were backed by a Charter of its own. At an adjourned meeting, held on July 22nd, however, unruly elements which vouchsafed allegiance to the Coleman regime obtained control,‡ which resolved that the action already taken within the profession to obtain representation on the Examination Committee was "not only uncalled for, but would create jealousy and disunion among the actual members of the calling and sever us from our best friends and supporters without any practical benefit either to the public or the students."

Thus ended the first organised attempt on the part of practitioners to obtain a voice in the control of their own affairs as a profession. It is evident that the time was not yet ripe for further organised action. The elements within the profession were obviously not yet democratically mature enough to adjust themselves in their own interest to a mode of orderly conflict, with a view to settling upon a well considered line of action, by aligning themselves in controversial issues in opposing parties prepared to accept the decisions of the majority.

The *Hippiatrist* continued its virulent tirades against arbitrary authority for another year and then became defunct. The *Veterinarian* wisely decided at once to realign its policy until the time was ripe, meanwhile nursing the profession into a state of healthy well-being by accumulating and recording the potential stores of knowledge among the practitioners, which ought to have long before been placed at the disposal of the profession if the original programme of the London School as laid down in 1793 had been carried out. One volume only of the then projected annual Transactions had been published, namely in 1801, since the inception of the College, with an apology in the preface to that volume from the Governors: "They [the public], however, who suppose him [Coleman] competent to furnish new matter well digested and worthy of public attention once in the year, over-rate his abilities."*

That both Astley Cooper and Coleman were insincere and actuated by no honourable motive in misleading the profession is testified by the following remarks in speeches made by them during the following year† at the yearly dinner of the Veterinary Students of the London College held on January 23rd, 1830, given to their Professors and the Medical Teachers to whose lectures they had been gratuitously admitted:—

". . . The Chairman (Sir Astley Cooper, Bart.) next proposed the health of 'The Professor,' with whom he had lived in the strictest friendship for 40 years, and the more he knew him the more he respected him. He was elected to the office, which he had so long filled with credit to himself and advantage to the profession—not because he was a groom or a jockey, for he should be sorry to see his friend on a restive horse, fearing that too soon he would be off again—but because he had successfully devoted himself to the pursuit of physiology, and had given to the world a treatise on a certain point of physiology, the merit of which was, to the present day, justly appreciated. He was selected from many who would have thought themselves honoured by the appointment, at the concurrent advice of Mr. Cline and Drs. Fordyce and Crawford; and since he had occupied the Professor's chair, things had gone on prosperously at the College. The Chairman alluded to the improved ventilation of the Cavalry stables; the establishment of a veterinary pharmacopoeia, instead of the farrago of drugs with which, reasoning from false analogy, the horse had been drenched; and he referred to the honourable distinction conferred on the Army veterinary surgeon through the instrumentality of Mr. Coleman, and known in no foreign corps; and he called on those who respected the Professor, and felt the benefit they derived from his instruction, to do justice to the toast.

"Professor Coleman complimented the Chairman on the steadiness and ardour of friendship by which he was characterised. Had he not been supported by him, and by gentlemen like him, on his right and his left, he would not have dared to retain the situation to which he had been elevated; but, enjoying the good opinion of those he valued, and having the happiness to know that he possessed the affection and confidence of his pupils, he would not resign the honourable station he occupied so long as life and health remained. He trusted, however, that there would be some kind friend who would warn him when he ought to retire, but until them he would endeavour to discharge his duty. He begged to propose the health of his old and tried friend the Chairman.

Sir Astley Cooper described the pleasure with which he had witnessed the improvement of our profession—our advance from farriery to science—and he trusted that we should still proceed, until we occupied that situation in society to which our profession gave us claim. He had worked with and for us, from affection for his fellow-student and friend, and from love of the art. He then digressed (why we know not, and we lament the digression) to the constitution of the veterinary examining committee, which he affirmed was 'the best constituted that could possibly be devised.' 'The examiners,' he said, 'were men eminent in their profession, and acquainted not merely with minute anatomy, but the principles of disease, and therefore qualified to judge of the pupil, not only as a mechanic, but as a medical proficient. If the board were otherwise constituted, if it were occupied by veterinary practitioners, they might be suspected or accused of partiality, although he could not imagine the real existence of these things; but among the present examiners there could be no partiality, and the students and the public would be assured that justice would be done."

Commenting editorially on the above, *The Veterinarian* (1830, **3**, 104: Youatt) says: "'*The present examining committee is the best constituted that can possibly be devised!*' so says Sir Astley, at the students' dinner; but what does he say and do when this committee had met to consider the propriety of a change in its constitution? First, we have the following document:—

'At a meeting of the Medical Examining Committee of the Veterinary College, held at the Freemasons' Tavern on May 21st, 1827, Sir Astley Cooper, Bart., President, Resolved that, in consequence of the more extended cultivation of the veterinary art, it appears to this meeting expedient to recommend to the general meeting of subscribers of the Veterinary College, to appoint, in addition to the present Medical Examining Committee, a Veterinary Examining Committee consisting of the Professor, Assistant Professor, and . . . Veterinary Surgeons; and that no diploma be in future granted to veterinary students unless they have been examined and approved by both committees.

'Resolved, that the above resolution be presented by Professor Coleman to the next general meeting of subscribers to the Veterinary College.

'Astley Cooper.'

"The next document runs thus:—

'At a Special Meeting of the Medical Examining Committee, convened May 20th, 1829, for the purpose of taking into consideration a memorial from a committee of veterinary surgeons, Sir A. P. Cooper, Bart., President; the memorial having been presented by Professor Coleman, and duly considered, 'The Medical Examining Committee resolve, that they see no reason to alter their opinion, as expressed in certain resolutions on May 21st, 1827, and presented by Professor Coleman on June 7th,

* *Ibid.*, 239, 246.

† *Ibid.*, 314.

‡ *Ibid.*, 320.

* It was mainly to supply this want left unfulfilled that the Percivalls founded *The Veterinarian* (1828, 1, 3).

† *Veterinarian*, 1830, 3, 101.

1827, to a general meeting of subscribers; and resolve, that, in order to afford every facility to the general meeting, should they think proper to appoint a veterinary examining committee, the medical committee wish it to be understood, that it would be most agreeable to their feelings that their services should be gratuitous.

'Resolved, that this resolution be communicated by Professor Coleman to the Committee of Veterinary Surgeons.

'Astley Cooper.'

"The recommendation of the committee," *The Veterinarian* comments further, "and a memorial to the same effect from the body of veterinary surgeons, were rejected *by the governors*, and the committee remained precisely as it was; and on January 23rd, 1830, this Sir Astley Cooper, in the face of these documents, unhesitatingly says that that which it was deemed expedient to modify *'is the best established that can possibly be devised'*."

In his tribute to Coleman at the above gathering, we would add, Sir Astley Cooper gave also a misleading impression of the circumstances which led to the appointment of his friend to the head of the London College, as they are now well known to the historian.

(3) *The Transition Period* (1829-1840) *between the Earlier Reform Movement and the later Charter Movement; the Rising Interest in the Agricultural Connection; William Youatt* (1776-1847), *the "Harbinger of Reunion."*

The tracing of the above circumstances precisely is important for several reasons. In the first place, there was as yet no strong urge within the profession for a reversion to the original connection between the veterinary profession and agriculture. The large town horse practices, especially of the metropolis, were not only proving highly remunerative, but were also providing a knot of respectable and substantial men endowed with a generous professional spirit; conspicuous among them was John Field, Moorcroft's partner and successor.* The connection had come, however, to his lasting credit, to be sedulously and increasingly fostered by Youatt in the pages of *The Veterinarian*, who now directed his campaign in large part to the entire neglect of the College to provide facilities for instruction upon animals other than the horse. The years between 1829 and 1839, the year of Coleman's death, therefore show a steady change in the veterinary outlook in that the inadequacy of the training imparted at the College to equip the country practitioner for the duties awaiting him was being made abundantly evident. Hitherto, the prosperity of the town practitioner and the Army Service, and the relative quiescence in the agricultural demands, had masked that inadequacy. There were no major plagues to cause great alarm; foot-and-mouth disease did not appear till 1839 and pleuropneumonia not till 1842, but even if they had occurred the alarm caused would have been mild compared with that caused by the outbreaks of cattle plague during the century before the establishment of veterinary education. Coleman, therefore, and his henchman, Sewell, who hardly ever went outside the walls of the College, were left, fortunately for them, undisturbed by the great shocks of the years that preceded and succeeded their lifetimes. Coleman taking much credit to himself for having brought about a striking diminution in deaths from glanders among Army horses through insisting upon the ventilation of stables. Here his previous physiological knowledge stood him in good stead. Dog practice had seen one of its greatest exponents in Delabere Blaine (1770-1845), "the father of canine pathology" and Youatt's senior partner in practice,† but except for the attention paid to rabies, this kind of practice had still very many years to wait before it was to assume importance in the eyes of a large body of veterinarians. Youatt himself, as has already been said, commenced classes on the diseases of cattle, sheep, pigs and dogs, outside the College walls, in no wise out of a sense of rivalry but, as was evident to Coleman himself, to supplement that inadequacy. Unfortunately, these terminated with the breakdown in Youatt's health. In 1833, Youatt calculated that the annual loss from disease among sheep and cattle to the farmer amounted to £13 millions—or more than one-quarter of the current total annual taxation, and all falling on one class of society.† Anatomy was, as in the medical schools, still not deemed worthy of inclusion in the actual curriculum, and similar to what was the case too with those schools, it was left to private extra-mural enterprise, undertaken for his profit by Charles Spooner,‡ from 1834, to supplement the rudimentary teaching on this subject given at the Veterinary College.

An event of major importance in veterinary history was the founding of the Society which became known as the Royal Agricultural Society of England in 1838. Had this event taken place a little over half a century earlier the whole course of British veterinary history might well have been changed, and the London College come from the outset under the direct patronage of a powerful agricultural society as Dick's School was destined to become later, instead of becoming dominated by a group of medical men without any profound interest in promoting the veterinary art. Youatt, in particular, had striven to forge the closest possible link between the new central agricultural society and the London College, and although what is now being said may appear to be a digression from the narrative of the Charter episode, it is essential to appreciate its relevancy to the most important developments occurring immediately before the Charter Movement began.

The year, 1838, preceding Coleman's death (1839) is a turning point in the chapter of history now under discussion. In its issues of June and July of that year *The Veterinarian* was able to record three announcements of cardinal importance. First, government had at last recognised the eligibility of graduates from the Edinburgh School to hold appointments in the British and East India Company's service, so that the London School no longer preserved a monopoly in this respect for its graduates. This placed the London and Scottish graduates to a very large extent on the common footing desirable to seek legal incorporation as a profession. Secondly, the projected central agricultural association had been formed, in view of the very disturbed state of agriculture in the country in May, and one of its aims in working "for the improvement of English agriculture and the branches of science connected with it" was a resolution which read: "To take measures for improving the veterinary art, as applied to cattle, sheep, and pigs."* Neglect to take notice of the needed measures had been, according to *The Veterinarian*, "*the great blot of the London School.*" Thirdly, for the first time in our history, at the meeting held on May 23rd, 1838, four veterinarians participated in the affairs of the newly formed Society for the Suppression of Cruelty to Animals.

All three incidents were destined to mark the beginning of a widening in range of interests for a body of professional men who would not long rest content to be shackled to the narrow and abridged discipline of an Astley Cooper-Coleman domination.

However, to the day of his death Coleman was not to be readily inveigled against his self-interest, however much it might promote the improvement of the profession, into accepting from extraneous sources anything to encroach upon his solitary control over the College, and hence, in alliance with his friend, over the rising profession.

The concluding portions of the editorial article printed, just after Coleman's death on July 14th, 1839, in *The Veterinarian*, whose chief editor (Youatt) certainly had no cause to show any particular gratitude, towards the memory of Coleman,* now merit reproduction:—

"Can we wonder if, finding that, under his predecessor, this *veterinary* school had dwindled down to one of mere horse-knowledge and practice, and that without rebuke from the powers that were, he [Coleman], although with infinitely superior talent and acquirements, should content himself with pursuing the same career that his predecessor [Sainbel] had done?

"Some time afterwards another circumstance occurred that sealed the fate of the College. The Board of Agriculture ceased to exist. There was no longer any control from this most influential quarter, and there remained only the Governors to conciliate, and that was no difficult affair.

"We acquit not Professor Coleman of much serious negligence. He was well aware that the intentions of the founders of the Veterinary College had not been followed out, and that he was not following them out: but there are few persons who would not have pursued the same course; and the blame was more than shared by those who contentedly, and without enquiry, suffered the original purposes of the institution to be so glaringly abandoned.

"Twenty, thirty and more years now passed by, and the Professor pursued the same course, and with more determination, because he received no rebuke. His attention, and that of the student, was confined to the horse. It was

* Readers are invited to read, for example, the biography of John Field given by Youatt in his obituary notice upon him in *The Veterinarian* (1833, **6**, 397) for an interesting account of the rise of horse practice in the towns.

† *Veterinarian*, 1836, **6**, 452.

‡ See Smith's *Hist. Vet. Lit.*, **4**, 56.

* Extract from the report of the half-yearly meeting of the English Agricultural Society held on December 18th, 1838:—

"Aware of the immense loss sustained in consequence of the want of better knowledge in the treatment of the diseases of cattle, sheep, and pigs, the attention of the Committee has been turned to this subject, in order, if possible, to devise means for supplying the deficiency. A veterinary school has long been established in the neighbourhood of the metropolis, and it has been most useful in teaching the scientific and successful treatment of the diseases by which thousands of horses used to be destroyed; but its attention has been almost exclusively devoted to the horse. It was, therefore, considered that if its labours could be directed with the same success to the management, in health and disease, of our cattle and sheep, it would be of inestimable advantage to the British farmer.

"Application has been made to the Governors of the College, stating the most anxious wish of the English Agricultural Society, that this most important extension of its enquiries and its benefits should take place, this Society not interfering with the arrangements of proceedings of the Governors of the College, but contributing from its funds to the accomplishment of this purpose.

"A most favourable answer has been received from some of the Governors, and a meeting will soon take place between them and a delegation of your Committee, from which the happiest result may be anticipated."

scarcely dreamed of within the College walls that there were other portions of the farmer's and the nation's wealth that required attention and care, or that there were other animals, valuable to the agriculturist, which were left to perish. Too often, indeed, he would hear of the fair prospects of the country practitioner benig altogether blasted by the lack of that instruction with regard to other animals which ought to have been given to every pupil. Too loud and too deep were the complaints of negligence with regard to the inferior animals; and, at length, of the endless repetition of the same worn out and discarded opinions with regard to the horse. Sometimes he would meet with severe rebuke from his elder and more influential brethren; and once the promise was extorted and *recorded*, that 'in the event of his introducing any person to a share of the lectures heretofore given by himself, it should be incumbent on such person to give the general structure and economy of cattle, sheep, dogs, swine, and other domestic animals, the diseases to which they are subject, and the remedies proper to be applied; and that, towards defraying the increased expense of this and other arrangements, the sum of five guineas should be deducted from the amount paid by each pupil to the Professor.'

"We do not, therefore, wonder that Mr. Coleman so obstinately pursued his course; that even in the last year of his professorship he laboured so hard to prejudice his pupils against the projected improvement; and that, so near the close of his career he adroitly neutralised the efforts of those who wished to unite together the interests of agriculture and of the College. Let him pass! He had his good points as well as his bad. . . ." (*Veterinarian*, 1839, **12**, 561.)

The contemporary testimony of a wise, friendly and acute observer also shed light on the veterinary situation at this moment.

Mr. Shaw, the first Secretary of the English Agricultural Society, that had just been founded in 1838 (after 1840, the Royal Agricultural Society of England), speaking on August 14th, 1839, on the occasion of the presentation of a testimonial by members of the veterinary profession to Youatt and after referring to the latter's zeal in promoting connection between that Society and the London Veterinary College, said, in words that are now extremely apposite to our present theme: "It has been remarked . . . that the veterinary profession owes a debt of gratitude to the late Professor Coleman for having given that profession, as it were, a standing in society by getting its members recognised as officers when attached to cavalry regiments. I would not have it thought that I seek to derogate from the merits of the late Professor, but I am rather inclined to believe that time and circumstances had much more weight in promoting that object than either the influence or exertions of that departed individual. A war carried out on a very extensive scale, in which great numbers of horses were employed, rendered the Government and the country alive to the importance of the veterinary profession, and hence, as it seems to me, the just mark of distinction bestowed upon its practitioners. So, on the other hand, I am inclined to view in a somewhat similar light the apathy which has been displayed in respect to the diseases of the other domesticated animals, and the impediments which, it is said, were interposed to prevent the study of those diseases at the Veterinary College. Independent of its utility, fashion and pleasure, supported by wealth, combined to stimulate attention to the horse. The time had not arrived when the amount of capital invested by the agricultural interest in cattle, sheep and pigs, not to forget horses used for agricultural purposes, far exceeded that of horses used for other purposes, and hence the cause of those animals being left to be treated by the ignorant and the unskilful. That time is now come; circumstances begin to operate by calling attention to the subject; and a fine field is opened to the practitioners of the veterinary profession, not only to elevate that profession, but to acquire affluence individually. *If, however, I may be permitted to hazard an opinion, I would observe that the elevation which that profession may attain must, in a main degree, if not altogether, depend on the exertions of its members.* (Our italics.) Feeling a lively interest in everything which concerns agriculture, I am happy to have had this opportunity of intermixing with gentlemen whose pursuits are so nearly connected, and whose interests are so intimately blended with it; and in the name and on behalf of the English Agricultural Society, I return you my most sincere thanks." (*Veterinarian*, 1839, **12**, 613.)

Following Coleman's death, the stage was set for rapid advance and the following proposals were soon urged in *The Veterinarian* (1839, **12**, 564) for the restaffing of the Veterinary College, London, to meet the changed situation:—

"1. The Director of the Institution, who shall also be Professor of the Pathology [the word then having reference to all that concerned disease] of the Horse, and Head Professor of the Clinical or Stable Department.

"2. The Professor of Anatomy and Physiology, and that extending to the Horse, Cattle, Sheep, Swine, Dogs, etc., and who shall also be Assistant Professor of the Clinical Department.

"3. The Professor of Pathology and Clinical Instruction, as it regards Cattle, Sheep, Swine, Dogs, etc.

"4. A Professor of General Chemistry, Veterinary Materia Medica and Pharmacy, Botany and the first principles of Agriculture.

"To these must be added an Assistant Demonstrator, who shall be Curator of the Museum, etc.

"The Professors of Veterinary Anatomy and Chemistry should be permitted to form private classes, to which they may impart other and more minute information than the public course of lectures could contain. . . .

"The residence of the pupil at the Veterinary College, prior to his presenting himself for examination, should be two years, unless he had served an apprenticeship to a veterinary surgeon; in which case the term of residence might be diminished in proportion to the length of his apprenticeship."

These proposals were soon carried for the most part into effect. Coleman's Assistant Professor, William Sewell, succeeded him as head, or Professor, of the Institution. Charles Spooner, who had conducted an extra-mural school of veterinary anatomy since 1834, had been made lecturer in Anatomy in November, 1838—which represented the first introduction of anatomy as a separate subject in the veterinary curriculum. In August, 1839, he was made Assistant Professor and Joint Superintendent of the Clinical Department, his lectures to comprise the anatomy and physiology of all the domesticated animals. In 1842, following further negotiations with the Royal Agricultural Society of England, James Beart Simonds was appointed Professor of Cattle Pathology. The subjects under the fourth heading were allotted in August, 1839, also to W. T. J. Morton, who started as a clerk and dispenser in 1822, early in Coleman's régime, and later obtained the veterinary diploma, and whose zeal and devotion in promoting the welfare of the profession for many years have left him a name that stands high in the esteem of posterity. The time of the student's residence at the College was extended to 18 months.

Another most important announcement was that F. C. Cherry, an able veterinarian of determined character and a fierce adversary of Coleman's, had been appointed to succeed him as Principal Veterinary Officer of the Army, thus severing for all time after nearly half a century the intimate connection between the London College and the Army, which gave it an ascendancy over any rival institution.

Meanwhile, during this important transition period following upon the failure of the early reformers to secure a voice in the management by the profession of its own affairs, there had been various signs that the time was arriving when its members must have recourse to organisation to obtain for themselves the necessary legal recognition. For example, as early as 1830, W. Simpson, a veterinary practitioner of Lancaster, in a letter appearing in *The Veterinarian*,* had said: ". . . I have long thought that the most direct road to the improvement of the profession, and, consequently, the advancement of its respectability, was to establish a college of veterinary surgeons, chartered by government, and similar in its principles to its sister institution, the college of human surgeons. Let the examining committee of that college alone have the power and authority to confer upon the student a certificate or diploma; for they only, as veterinary surgeons, can form an adequate judgment of the qualification of each candidate. . . ." Not until 1834, however, did *The Veterinarian* itself conceive such a solution to be the only way of solving the difficulty:—

"We are not now disposed," it said, "to go over the old ground of debate—the construction of this board of examiners. It is a board perfectly *sui generis*—no other branch of science is degraded by one like it. Common sense tells everyone else that the professors of an art are the best, the only judges of the proficiency of the students of an art; and that it could be the most flagrant of insults, and indelible brand of incompetence and dishonour, to delegate that examination to others. . . ."

"The plain truth of the whole matter is, that the practitioners of human medicine are struggling for the restitution of certain rights and for a reform in the general management of their interests. That fight once fought, another must and will follow. The veterinary practitioner!—he has no rights which he claims to have restored; but he has a stronger, an irresistible claim—a claim for the acknowledgment of *legal existence and protection*. At present he is a kind of outcast. While the privileges of the medical practitioner are guarded by legal enactments and his fair field of practice, and, what is dearer to him, his professional character are secured by the exclusion of those who have not proved themselves competent and worthy, the veterinary surgeon is elbowed, defamed and robbed by those who frequently have no other claim than ignorance and presumption. This state of things must not, will not, continue; the professional existence and the rights and privileges of veterinary men cannot fail of being soon admitted and secured.

"The method in which this is to be accomplished and in which alone it can be truly and honestly so, is by the legal establishment of a body similar to the corporations of physicians, surgeons and apothecaries; the original members of which shall be selected from the profession generally (not, perhaps, excluding the conductors of certain schools, but altogether independent of them), and where veterinary men shall decide on the competence of veterinary students, and defend the rights of veterinary practitioners, and without the diploma from whom no one shall hereafter be permitted to commence practice.

"This will, ere long, be claimed and granted; but then all *exclusive privilege* must merge in the general interest. . . . The prosperity of our art would take its date from the legal recognition of our claims, and the provisions that would necessarily result from that recognition. . . ." *The Veterinarian*, 1834, March 1st, 7, 158.

Afterwards, in the same year (1834), in a note appended to a letter complaining about the unfair competition which the graduate from the London College had to suffer from empirics, in which the writer says, "An Act of Parliament was once tried for to prevent any but a regular veterinary surgeon from practising, but was not obtained; nor does it appear that a second application would be more successful than the first," the Editors wrote:—

". . . we hope that the establishment of a public board of veterinary surgeons, before whom every candidate for practice must appear, and without a licence from whom he will not be able legally to practise, will, at no distant period, establish a better distinction between the regular veterinarian and the mere empiric. Our young friend [*i.e.*, the correspondent] is wrong when he says that 'an Act of Parliament was once tried for to prohibit any but a regular veterinary surgeon from practising': there was an attempt to obtain exclusive privileges for a particular school; but this, like every other illiberal and absurd grasp at monopoly in science, necessarily failed." (*Veterinarian*, 1834, 7, 263.)

Writing again later, in June, 1834, an able country practitioner who contributed meritoriously to advancement in the profession,

* *Veterinarian*, 1830, **3**, 553. We have already referred to the contention made during the meetings of the profession held in 1829 by James Child (1799-1881), of Hackney, that, to quote his words, "*Nothing can be done effectually until, as a body, we apply for a charter. . . .*" His plea, however, was destined to fall on ground that remained sterile for several years. (*Ibid.*, 1829, **2**, 317; 1881, **54**, 434.)

W. C. Spooner, of Winchester (*not* to be confounded with Charles Spooner, Sewell's successor as head of the London College, whose actions in promoting disunity during the post-Charter period have sullied his good name as among the most sinister in our professional history*), wrote regarding the earlier attempts to secure representation of the College board of examiners:—

". . . I still think that the benefits from it will be but trifling if our requests were to cease here, or to stop short of anything but *legislative protection*. . . . The evils which the medical profession seek to remove are trifling compared to ours, for people no longer trust their lives or limbs to the care of barbers; but the noblest of domesticated animals are too frequently consigned to the dogs through being committed to the care of men much less intelligent than the barber surgeons of former times. I trust, therefore, that in due time some exertion will be made towards relieving our profession from the incubus that now bears it down; and that the cause of science will not be abandoned by its friends, to be smothered in the mists of ignorance raised by its numerous foes." (*Veterinarian*, 1834, 7, 300.)

Afterwards, from 1834 onwards, there begins to appear something altogether new on the veterinary horizon, in the writings of a young man possessed of great magnanimity and infinite charity pleading, often conjointly with his father, with his professional brethren to come together to vindicate their claims to recognition as a self-respecting,† coherent body. The son was Thomas Walton Mayer (1814-1887) and the father Thomas Mayer (1791-1848), of Newcastle-under-Lyme, the father's name appearing as signatory on the Charter.‡

(4) *The Mayer Memorial to the Governors of the London College.*

The year 1840 is marked by a recrudescence of feeling among the profession which, contrary to that worked up in 1829, was far better marshalled and which declared the profession now to be in a much stronger position to confront the monopolistic régime of the London College rendered as it was then sadly weakened by the death of Coleman. That feeling was marshalled by the Mayers, who obtained the signatures of a majority of the whole profession to a Memorial§ drafted for presentation to Governors respectfully soliciting their acquiescence to certain measures of reform at the College.‖

In a circular letter which they afterwards addressed to the signatories¶ they explain:—

". . . "Our object has been, from the commencement, to give that permanent standing and character to our Alma Mater which she ought to possess—to strengthen the hands of our Professors—to establish an efficient course of education, the best of the kind—to ameliorate the condition of the whole body, and to strengthen the natural and growing connection which is taking place between the English Agricultural Society [now the Royal Agricultural Society of England] and the agriculturist everywhere, and the practitioners of the veterinary art.

"The letters which we have received not only breathe an ardent desire to behold the Veterinary College assume its proper position among other similar establishments throughout Europe, but to have established a more perfect course of education than at present prevails. We will not conceal that we have ulterior views. When we have made the education of the veterinary surgeon that which it ought to be, and which it is in every institution of the kind but ours, we shall have a right to think of, and to supplicate from the powers that be, 'a Charter of Incorporation,' to protect us from illiterate and uneducated men, and to afford us the same privileges and exemptions which other professional bodies possess.

"We have been much gratified in finding a respectful and proper tone of feeling pervading our brethren towards the Professors and the Governors. This has cheered us on in the course which we are steadily pursuing, in order to secure our common object. . . ."

Then after detailing the several heads of suggested improvement, they add:—

"All these points being conceded—and is it possible that, being so plain, so just, so advantageous, one of them should be, to any material or fatal degree, refused—we can with a good grace pray for a CHARTER? We shall possess every element necessary to its existence; and we shall feel the benefit of it in the increased esteem with which, if we are well conducted ourselves, we shall bt regarded; we shall claim an exemption from vexatious and harassing parish offices; and we shall have the power to interfere, so far as discretion will warrant, between the public and unauthorised intruder. . . ."

In the actual Memorial to the Governors there is no mention of a Charter but a respectful plea for the harmonising of the teaching to comply with the contemporary needs as summarised in the foregoing pages of the present article.

Commenting editorially on the Memorial and commending it to its readers *The Veterinarian* concludes by saying*:—

> ". . . We will write no more than to express our most cordial approbation of the course our friends are pursuing, and our conviction that the great majority of our profession will sign the Memorial. The name of Mayer will be added to the list of those who have done our profession service, and our children's children will have to thank them."

On June 6th, 1840, a meeting† of the profession was called in London, at which T. W. Mayer gave information upon what he and his father had done and at which it was resolved unanimously to present the Memorial to the Governors by a deputation comprising James Turner, Joseph Sewell, J. H. Langworthy, Francis King, Jun., J. Nice, Thomas Turner, J. B. Simonds, William Major, William Field, T. W. Mayer, H. Dawes and J. Jones; "and that they be requested to address the Governors in support of its prayer, and to urge upon them the necessity which exists for a Charter of Incorporation." Thomas Turner, henceforward destined to play a part in the shaping of the profession for which he has earned its lasting gratitude, was elected to present the Memorial to the Governors on June 10th. At the presentation the deputation admitted to the Governors that they had already been in touch informally with Government on the subject of a Charter as that was "the wish that seemed to prevail through the whole profession." The reply‡ of the Committee of Governors, dated July 3rd, 1840, was:—

> "That the Committee do not see the immediate necessity for applying to the Crown for a Royal Charter to be granted to this Institution; but that every facility would be given to the veterinary surgeons for procuring an Act of Parliament to prevent certain grievances complained of by the Memorial, which could not be relieved by a charter, . . ."

Following this, T. W. Mayer sought to ascertain from the Governors why they had not replied to the various points referred to in the Memorial, and confined their reply to the question of the Charter. Referring to the matter afterwards in a speech in 1844, after the Charter had been obtained, Mayer said: "The memorial was commenced and carried on with no other object in view, with no other advantage to accomplish, than the amelioration and advancement of the veterinary profession. It was . . . unsuccessful, and I think justly so, because (and it is what I did not know then, but it has been confirmed by Professor Sewell) the Veterinary College of London is a private establishment, supported by voluntary contributions; and in the proceedings of that institution, or in any department therefrom, we had not the right to make a single observation.§ Nevertheless, the Memorial proved "the means," as he added, "of showing that there was a mighty spirit at work in the profession; *that there was a nucleus around which all of us could unite. . . .*"‖

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* "His whole life from 1844 to his death in 1871 was devoted to this work of disintegration, flourishing a stick over the heads of the Council, and thundering at and threatening the Royal College with secession unless permitted to have his way. . . ."—Smith's *Hist. Vet. Lit.*, 4, 61.

† The anomalous and humiliating situation, though it was being appreciated to be fast becoming obsolete, as represented by the Examining Committee of the London College being composed exclusively of medical men, veterinary men not being admitted even if they had medical qualifications, is brilliantly portrayed in an open letter addressed by William Percivall to Bransby Cooper (Astley Cooper's nephew) in *The Veterinarian*, 1840, 13, 94.

‡ T. W. Mayer had graduated from the London College only in 1835, and so he must have conceived it as his mission at once to devote himself to the cause of the profession, doubtless inspired by his father, whose parents on both sides were connected with the veterinary profession, his grandfather having been veterinarian to a regiment of German Hussars in the time of George I. Mayer, senior, was articled to a surgeon for three years and then went to the Veterinary College, London, where he was a student with Youatt, to whom, in 1813, he proposed the formation of a Veterinary Medical Society at the London School, which was duly carried through. It has seemed rather strange that not much more was heard about T. W. Mayer after the Charter had been obtained. It seems that the family afterwards suffered severe pecuniary losses and much bereavement, the younger Mayer being bereaved of his wife during the actual Charter negotiations. Hence, in 1855 he relinquished practice to join the Army, serving in the Crimean campaign. (For details see *Vet. J.*, 1887, 25, 226; Smith's *Hist. Vet. Lit.*, 4, 52, and *Hist. R.A.V.C.*, 139.)

§ *Veterinarian*, 1840, 13, 193.

‖ *Ibid.*, 357.

¶ The Memorial had four important points: (1) to obtain a charter to protect the qualified members from service in certain parochial offices, and to enable them to check the pretensions of incompetent and uneducated men; (2) the better remuneration of the lecturers, or, in other words, an increase in the admission fee; (3) the shorter or lengthened residence of the pupil according to his previous advantages; (4) the appointment of a competent lecturer in cattle pathology.

* *Veterinarian*, 1840, 13, 199.

† *Ibid.*, 482.

‡ *Ibid.*, 543.

§ *Ibid.*, 1844, 17, 304.

‖ Thomas Turner, the Chairman of the Charter Committee, in the course of an address given towards the end of 1842 (*Veterinarian*, 1842, 15, 687), said: "A few words, however, I must be permitted to say respecting the secretary, Mr. Thomas Walton Mayer, of Newcastle, with regard to whom any eulogiums of mine would fall immeasurably below his real worth. Without his co-operation after the ladder had been raised to the building, not one step could have been advanced. The labours of that gentleman have proved little short of Herculean. For his generous self-devotion to the accomplishment of our noble object he has my most grateful thanks; he has also that which is of far higher worth—his inward feeling of satisfaction at being instrumental, in early life, in attempting to establish the best interests of the art of which he is becoming so distinguished a member."

It is not clear whether James Turner, the brother of Thomas Turner, was referring to the father or the son when he said at the Charter celebrations:

(*Concluded at foot of col.* 1, *page* 621.)

On November 3rd, 1840, a meeting of the veterinary surgeons who had signed the Memorial to the Governors of the Veterinary College, London, was held, Thomas Turner in the chair, at which the following resolutions* recommended by the deputation were passed unanimously; they had been assured "by undoubted authority" "*that they could not go before Parliament until they had obtained a charter of incorporation*"†:—

"(1) That in the present advanced state of veterinary science, it is the deep feeling of the profession that a limited number of Veterinary Surgeons should be added to the present Examining Committee. . . .

"(2) That the propriety of petitioning the Privy Council for a Royal Charter should be considered, conferring upon the graduates of the Royal Veterinary College and the College of Edinburgh the title of the *Royal College of Veterinary Surgeons, upon the same plan and constitution as the present Royal College of Surgeons*; and that, in addition, an Act of Parliament be obtained, granting unto the members of the *Royal College of Veterinary Surgeons* the same exemptions as the present members of the College of Surgeons enjoy.

"(3) That a Standing Committee,‡ with a Chairman and Secretary, with power to add to their number should be appointed to watch over the interests of veterinary science, who shall be empowered to call a general meeting of the Memorialists, and to take such measures for carrying out the several propositions as may be agreed upon."

(5) *The Work of the Standing Committee of Veterinary Surgeons appointed on November 3rd, 1840, for the purpose of promoting the interests of the Profession.*

In February, 1841, a circular was addressed by the Secretary (T. W. Mayer) stating that the sum of £20 had been placed at his disposal but suggesting that a sum not exceeding Two Guineas might be expected from each member who had signed the Memorial to attain the contemplated objective. The death of Sir Astley Cooper on February 12th, 1841, removed the last most formidable obstacle remaining from the old régime.§ The committee soon met with a response that was scarcely anticipated‖: powerful allies, it was said, "joined them from many an influential quarter," and particularly among members of both Houses of Parliament, while the movement was receiving cordial support from the profession itself. At a meeting of the Committee held on April 15th, 1841, Francis King, Jun., was appointed Treasurer, the subscriptions then amounting to £206 14s. 6d.; W. Field and Thomas Turner were appointed a "Sub-committee of Finance."

On April 5th and 23rd meetings of veterinary surgeons in the West of Scotland were held at Glasgow,¶ with Archibald Sinclair in the chair and John Lawson (then a student) as Secretary, expressing gratification with the proceedings of the English Committee and agreeing to give them financial support.

The spirit pervading the profession at that time is probably well reflected in the words contained in a letter written by a practitioner (G. Baker, Reigate)**: ". . . I hope to see the charter we desire to obtain a bond of union, cementing and uniting all parties in our profession in one golden chain of mutual dependence and mutual support. . . . With every member of our profession would I urge the necessity of concord and union, of mutual concession and mutual support; for if we strive as brethren, we shall not strive in vain. Remember, 'in all youth's lexicon that leads to glorious manhood, there is no such word as *fail*.' The combined energy and co-operation of the whole profession is all that is required to raise it to the proper standard, and firmly to establish its claims on public support."

A further happy augury was the published expression of Dick's general approval of the charter proposal.*

It is clear, however, that some difficulty was being experienced by the Committee on account of the attitude of the two schools.† Mayer, Sen., in an address given late in 1841, says‡: ". . . I had hoped that, by this time, my colleagues and self, who have laboured for the obtainment of the charter, might have been enabled to have congratulated the profession upon possessing a chartered college of examination. . . . This is the only true position the profession can occupy as a chartered body, with full and unfettered advantage to itself and to the Veterinary College. . . . Did I not feel assured that my friends, Mr. Sewell and Mr. Spooner, would give me credit for not meaning any disrespect towards them in touching on this tender ground, but that they would attribute it to my zeal for the welfare of the art, I should not have done it. . . ." In its last editorial at the end of the year *The Veterinarian*§ stated that there but remained for it three political objectives to achieve: "First, the introduction at the Veterinary College of a competent lecturer on the diseases and the management of cattle; secondly, the examination of the veterinary pupil by veterinary men, by those alone who are competent to the task; and third, by the determination to procure a charter by which the honour and interests of the profession may be effectually secured."

Early in 1842 the Committee were able to announce a favourable turn in events.‖ On April 22nd, a deputation waited by appointment on the Home Secretary (Sir James Graham¶) and its members were most courteously received by him," aided in their object by two Members of Parliament. In their report, the Committee say that Sir James Graham remarked:—

"*first*, that we were now applying for the very thing which, as far as the medical profession was concerned, a large number were desirous of getting rid of, or in other words, desirous to alter and amend; *secondly*, that he *never would give his sanction* to the imposition of any fine upon an unqualified person or empiric practising his calling; stating it as a reason, that the public were the best judges of the person they choose to employ, and, whether judiciously or not, the public took the responsibility; *thirdly*, that he thought we underrated our standing and respectability, as we were at present constituted, as well as the degree of estimation which the public entertained of us as a body; he further remarked that our parent institution, the Veterinary College, possessed no Charter or greater privileges than we enjoyed."

Sir James Graham also hinted at the favourable reception which the move of the veterinary body was having in Scotland, reading part of a letter from Dick.‡ Further, some alteration was likely to appear in the forthcoming Bill for the medical profession††; when he would take into consideration the suggestions and applications of the veterinary body; his view, however, was that what was done for the veterinary profession had better form a distinct measure. The Committee concluded by reaffirming their resolve, "*never to cease from their exertions until they had obtained for*

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* *Veterinarian*, 1840, 13, 681.

† *Ibid.*, 737.

‡ The original committee appointed comprised 20 members: G. Baker, Reigate; G. Baldwin, Fakenham; E. Braby, London; Cheeseman, Wandsworth; Daws, London; Ernes, London; E. Gabriel, London; Karkeek, Truro; F. King, jun., Stanmore; Mayor, London; Mayer, sen. and jun., Newcastle-under-Lyne; Nice, London; James Sewell, Brighton; Jos. Sewell, London; Silvester, St. Albans; J. B. Simonds, Twickenham; W. C. Spooner, Southampton; T. Turner, Croydon, with the last-named as Chairman.

§ *Veterinarian*, 1841, 14, 164. This gives an interesting account of the life and work of Astley Cooper.

‖ *Ibid.*, 224.

¶ *Ibid.*, 345.

** *Ibid.*, 473.

"They were met that day to celebrate the obtaining of their Charter; but there were many among them who were, perhaps, not aware of the steps by which that object had been obtained, or the individuals who laboured to accomplish so desirable a purpose. To such it might, perhaps, be new to hear that Mr. Mayer, of Newcastle, was to be truly regarded as the parent of their profession. There might be many older men; but he alone had stood forward, out of a body of a thousand strong, and to argue the propriety of making an effort to obtain a Royal Charter he came to London several years ago. . . ." (*Veterinarian*, 1844, 17, 293.)

A much respected contemporary, William Ernes (1799-1871) (see Smith's *Hist. Vet. Lit.*, 4. 82), speaking later after T. W. Mayer's opening address on the Charter at the First British Veterinary Congress in 1867 said: "No one was better able to give the Society an account of the difficulties and troubles attending the obtainment of the Charter than Mr. (T. W.) Mayer. It was through the suggestion of Mr. Mayer and his worthy father that first of all the conclusion was come to that a charter was necessary. . . ."

* *Veterinarian*, 1841, 14, 568. (. . . "while I would prefer." Dick says, "the natural protection which highly scientific and practical attainments, tested by public examinations, will give. I must, in the present state of society, agree in the propriety and advantages to all parties which a Charter would afford. . . ."

† *Ibid.*, 775.

‡ *Ibid.*, 798.

§ Smith briefly reviews the situation in the following words: "For many years a growing dissatisfaction had been felt with the organisation of the profession, and the opinion became widely held among practitioners that the power in the hands of the London Veterinary School must be taken away or modified. After the death of Coleman a Committee of the profession appealed in 1840 to the Governors to apply for a Charter. The reply being unfavourable, the Committee decided to move itself. The first petitions were refused largely owing to the fact that the Veterinary Schools were not among the applicants. Sewell was opposed to all changes. Dick had long lived a life of isolation and was content. But with the introduction of two reformers, Spooner and Simonds, into the London School in 1842, it was hoped Sewell's objection might be overcome, and so it proved. Probably Spooner's friendship with Sewell is to be thanked. Sewell, indeed, now became enthusiastic about the Charter . . ." (*Hist. Vet. Lit.*, 4. 59.) Sewell's truculent attitude is referred to in *The Veterinarian*, 1842, 15, 349.

‖ *Veterinarian*, 1842, 15, 281, 347.

¶ Sir James Graham, also a Tory and a great territorial magnate, had been First Lord of the Admiralty in Earl Grey's administration of 1830, which saw through Parliament the great Reform Bill of 1832, having been one of the members of the Drafting Committee of the Bill. He became Home Secretary in Sir Robert Peel's Government, which was founded on the resignation of Lord Melbourne's Whig administration in 1841 and was Peel's "right-hand man" being in office at the time when the Charter 1844 was presented, the Lord Chancellor being Lord Lyndhurst.

†† See *Veterinarian*, 1842, 15, 520.

the veterinary surgeon that rank, station and professional education, which is justly his claim and right to expect."•

One aspect of the contemplated Charter privileges had forcibly struck itself on the attention of practitioners for several years, namely, their standing as expert witnesses in courts of law. Thus, in a speech made by F. C. Cherry during the 1829 meetings of the profession, declaiming upon the alleged worthlessness of the Coleman diploma, he said: "I was present in a court of justice when Baron Vaughan, remarkable for his horse knowledge, looking at the College certificate, asked, 'What is this? A piece of parchment: no, not possessing the value of parchment; a scrap of paper.' There are great names attached to it—Sir Astley Cooper, Mr. Brodie. These names would tell for something subscribed to the certificate of a human surgeon, but these gentlemen can know nothing of veterinary practice. You must put this completely out of the question."†

Again, Thomas Turner, the Chairman of the Charter Committee, and a member of the highly respected family practising at Croydon, relates the following anecdote in the course of the address already mentioned‡:—

"Having to attend at Warwick sessions as witness and prosecutor of a man who stole two horses, the property of two gentlemen, from a field of mine at Croydon, and which ended in the offender being found guilty and sentenced to be transported for ten years, the counsel for the prosecution ably addressed the Chairman on the bench for my expenses to be allowed as a professional man, whose time was in much demand by the public.

"The worthy Chairman's reply was a very decided one and as follows: Had Mr. Turner's profession been acknowledged as other professions, I should have much pleasure in sanctioning, and the county would have sanctioned, a more considerable pecuniary allowance; but this not being the case, I much regret that it is out of my power to allow Mr. Turner a sum beyond that of any ordinary witness, viz., five shillings a day.'

"I immediately made my bow to the Court, and, as you may all fairly well conclude, not quite on good terms with my own position. A few short minutes passed after this Court scene was over, and the thought struck me that had we been a Chartered body I should have escaped this apparent indignity, and only a few weeks prior to my visit at Warwick such an advance had been made in furtherance of our common cause, that there appeared a foretaste of empiricism being deprived of its sting, and that every licentiate of the Royal Veterinary College would be deemed a professional man, as by law established. . . ."

• Thomas Turner in the course of "The Annual Oration on the present state and future prospects of the veterinary profession" delivered at the London Veterinary College late in 1842, spoke of the encouraging and sympathetic hearing which the deputation of veterinary surgeons consisting of W. Percivall, veterinary surgeon at the Life Guards, W. J. Goodwin, veterinary surgeon to the Queen, W. Field, the eminent London veterinary practitioner, E. Gabriel—who afterwards became first secretary of the R.C.V.S.—with himself, T. Turner, as Chairman, and T. W. Mayer as Secretary, together with Mr. Kemble and Mr. Antrobus, the two Members of Parliament for Surrey, received when they waited on April 22nd, 1842, on the then Secretary of State for the Home Department (Sir James Graham). Turner adds: "It must be a source of becoming pride to every veterinarian engaged in this undertaking, whether it be eventually successful or not, that the individuals who had the honour of being entrusted to represent the interests of the body at large to Sir James Graham were most kindly and patiently listened to for a whole hour, by that distinguished statesman, and every material point discussed with him seriatim." This warmth of the reception must have rather surprised Turner, for, to use his words: "The result of that interview, to say the least of it, will form an epoch in our veterinary history; and deservedly so, when it is recollected that an application for a Charter was made by our parent institution, about 40 years ago, to the late Earl of Eldon, then Lord Chancellor, who summarily dismissed the application, by pithily saying, "*You shall not have a charter: the time has not yet come for that.*" (The italics are his.) (*Veterinarian*, 1842, 15, 688.)

Turner's statement is confirmed concerning the Eldon refusal in the speech given by Professor Sewell (Coleman's successor—Coleman having died in 1839) at the dinner immediately following the first meeting of "the body politic and corporate of the Royal College of Veterinary Surgeons" held on April 12th, 1844, at the Freemasons' Tavern, Great Queen Street, London. He wished, he said, to state a few facts relative to the London College and the profession "which has now been established nearly 50 years. It was about that time that the appointment of the first professor, who was a Frenchman, and who was succeeded by the late Mr. Coleman, had taken place. It was 50 years ago since the first pupil passed his examination before a board of examiners consisting of the first surgeons of that day. The institution owed its origin to some gentlemen who had been travelling through France: of these Mr. Grenville Penn was now the only survivor. As these gentlemen first formed the Veterinary College, so it has existed to the present time. It was governed by members selected in the same way as at present, and was called by courtesy, although it had no real title or claim to the designation. "The Royal Veterinary College." *Fifty years back a charter was asked for this establishment, but was opposed by Lord Eldon, who thought that it might lead to some infringement on the liberty of the subject, and consequently it was refused. Now, however, when time had either modified or done away with these objections, public opinion had changed upon this point, and the result was that they had now a Charter of Incorporation, by which they had obtained certain privileges, and by which their profession had been raised to the level of others. . . .*" (Our italics.) Later on, Professor Sewell adds: ". . . It was that gentleman (Mr. Grenville Penn) and the late Arthur Young who first expressed astonishment that this country should be so late in taking up an institution of this sort." (*Veterinarian*, 1844, 17, 289.)

["John Scott, first Earl of Eldon, was throughout his political life a consistent and unbending Tory of the deepest hue." Entered the House of Commons in 1782, became Solicitor-General in Pitt's administration in 1788, Attorney in 1793, Chief Justice of the Common Pleas in 1799, and Lord Chancellor 1801-1806 and 1807-1827, that is, until Canning (whose liberal views were repugnant to the Upper House and brilliant wit failed to conciliate the Lower) came into power as Prime Minister and Eldon refused to serve under him. To the end of his life Eldon was the typical representative of that school of Toryism which detested the idea of change or reform."—*Marriott.*]

† *Veterinarian*, 1829, 2, 314.

‡ *Ibid.*, 1842, 15, 686.

"There is one topic," said the editor of *The Veterinarian*, in the last number (p. 707) for 1842, "which has been purposely left unnoticed, but which, when the season arrives shall, nevertheless, receive in our hands, every consideration and support in our power to bestow upon it; we mean, THE CHARTER. In the interval we strongly urge these gentlemen who have so kindly taken upon themselves the labours of the task, not to relax their efforts; but when the fitting time will arrive, to renew their petition, and to do so *in a body*, and not as one party asking for that of which another disapproves. They must not forget the ancient adage, *vis unita fortior.*"

At a meeting* of the Committee held early next year, February 6th, 1843, the long sought for attempt to secure the co-operation of the staff of the London School was achieved, when it was announced that Professor Sewell and Deputy Professor Spooner were unanimously elected members of the Committee. The petition, as originally drafted,† it was also reported, had received several alterations; "and in addition to the names of Messrs. Turner, Goodwin, Dick and Mayer, the Committee are happy to announce that it has received the signatures of Messrs. Sewell, Spooner and Simonds." During the remainder of the year 1843, hardly anything seems to have been published about the work of the Committee, though it is hard to believe that they could not have been otherwise than very active during this time.

Then early in 1844, the phenomenon occurred which is best displayed in the following letter from Professor Dick to T. W. Mayer:—

"Edinburgh, *February 25th*, 1844.

"My Dear Sir,—I am glad to learn that you have succeeded in obtaining the Charter; I certainly did not expect it; circumstances, however, have been favourable. The present Ministers coming into power, and the agitation for the New Charter by the College of Surgeons, have aided much in enabling us to obtain what at first appeared to me very unlikely. I hope you will be as successful in obtaining from Parliament those privileges to which, as an incorporated body, we are entitled.

"I have received your circular and would have sent you a remittance, but am anxious to know what is my share, which, although I have not yet sent any portion of, I have held myself responsible, and shall be glad to hear from you as to the amount.

(Signed) "W. Dick.

‡ "To T. W. Mayer, Esq."

It is not possible, as we have already said, within short space, without risk of distorting the narrative, to render full justice to the events and personalities which contributed to the delay, extending to 37 years, in achieving *the next step*, which was "*in obtaining*," to quote Dick's own words as given above, "from *Parliament those privileges to which, as an incorporated body, we are entitled.*" The place which has to be assigned to Dick in our professional history stands very high, and it would be unfair to his memory if the impression were to be conveyed that a main cause of that long delay were the attitude taken by Dick himself.§ There can be little doubt from the tone of the letter we have chosen to reproduce above that his warm sympathies were to be elicited in support of the common cause if proper regard had been paid to his feelings and his position. Reading the document at this date, it is hard to subscribe to the belief that in the First Report‖ of the Council,

• *Ibid.*, 1843, 16, 155.

† The original draft is given in T. W. Mayer's address on the Charter in 1867. (*Veterinarian*, 1867, 40, 481.) Mayer there says: "The Charter contains all the provisions prayed for, yet, notwithstanding the advantages conferred upon the profession by the provisions, it was always looked upon as a means to an end."

‡ Shortage of paper and shortage of space precludes further development of the narrative. Readers may refer to *The Veterinarian*, 1844, 17, 172-280, for historic descriptions of the reception of the Charter by the profession. It has been a matter of much regret that we have been unable (as was also the late Sir Frederick Smith) to obtain photographs of some of the principal workers in the Charter movement for reproduction on the frontispiece to this Centenary Number. In particular, it would have given us much pleasure to reproduce one of Thomas Walton Mayer. In default, we have felt it a fitting tribute to his memory and a just recognition of what the veterinary profession owes to him to open the number with short passages from his writings at the time he, with his father, was about to launch the campaign in the profession which gave rise to the movement that culminated in obtaining for us, largely through his own self-sacrifice and persistence, our Charter. We have already said that he left his practice at Newcastle-under-Lyme to serve in the Crimean War (1855-57), and then obtained a commission in the Royal Engineers, which he held until 1870 when he was retired for age. He founded the Army Veterinary Medical Society at Aldershot in 1861, and was present at its revival in 1887. He died, much honoured and respected, at 58, Victoria Road, Aldershot, on August 7th, 1887, aged 73, and lies buried in Aldershot Camp (or Military) Cemetery, where his tombstone can still be seen.

§ *Veterinarian*, 1844, 17, 280; 1845, 18, 521, 592.

It is not clear what Dick meant when he was alluding to "new Ministers coming into power," because all the important Charter transactions occurred in Sir Robert Peel's Ministry (1841-46), Sir James Graham, as Home Secretary, being the Minister upon whom the deputations waited.

‖ *Ibid.*, 1845, 18, 382.

R.C.V.S. (published in accordance with a motion raised, however, by Dick himself at a meeting of Council on June 5th, 1845), language was chosen calculated to pay the respect that ought to be his due. It is also rather difficult to understand why more sympathy was not extended to him at the time by the editors of *The Veterinarian*. Far less deserving of any sympathy was the attitude taken by the Governors and staff of the London Veterinary College almost immediately after the grant of the Charter and towards which the new Council, under the wise leadership of its first President, Thomas Turner, at once showed itself up to fine advantage.*

Much of the difficulty experienced at the beginning can be explained away in the words generously used by T. W. Mayer in his address upon the Charter given 23 years later.†:—

". . . Instead of waiting upon events, instead of quietly and with great deliberation putting into force the provisions of the Charter, laws and by-laws were made to be repealed, and vain efforts attempted to place the profession in a position *at once* which can only be accomplished in the course of time." I confess that I was one of those over-zealous individuals who lent my support and influence to the enactment of many laws, calculated, as I believed, for the future prosperity of the profession, but which from the tone and manner they were introduced, had at the time a tendency to provoke disunion. . . ."

Here, again, the young profession newly entrusted with its self-governing and other powers, had, in truth, nothing for which to reproach itself unduly, for all was in accord, if we accept the testimony of the general historian, with the contemporaneous evolution of our British democratic institutions.‡

One cannot, however, looking back, but regret that the reunion between the infant profession and agriculture already began did not succeed, during the "golden years of prosperity" (1853-62), and unprecedented development in the livestock industry that were soon to follow, perhaps largely through that early lack of close unity, in becoming more firmly and lastingly established.

* *Ibid.*, 1845, 17, 605.
† *Ibid.*, 1867, 40, 486.
‡ ". . . The Reform Act of 1832 dethroned the landed aristocracy and committed supreme power to the commercial classes. The full effect of the change was not, however, discernible for a generation. Until the death of Lord Palmerston (1865) England continued to be governed by a knot of great families which had ruled it since 1688. But by 1865 the era of middle class rule was itself drawing to an end. In 1867 a second shifting of the centre of political gravity occurs. By Disraeli's famous "leap in the dark" (1867) the mass of town artisans were admitted to the parliamentary franchise. By Gladstone's Act of 1884 the same privilege was conferred upon the rural labourers. Again, however, it will be seen that a generation had to lapse. . . ." (*Marriott.*)

". . . Its (the Veterinary College's) interests as a national institution are inseparably connected with ours and we cannot be otherwise than sincerely attached to it. There are, however, different ways of showing love. One person can see no fault in the object of his affection, and defends as excellencies its greatest inconsistencies. Another is fully alive to every excellence, but he is not insensible to those imperfections to which every individual and every institution is liable; and he has sufficient courage, or rather affection, to discharge the most painful, but paramount duty of love, namely, to endeavour to rectify those faults. The present company may be made up of both these descriptions of persons. The feeling in all is the same, but the manner of expressing it is different. Each party is equally sincere: the one must not be accused of servile and interested flattery, nor must the other be suspected of aversion or malignity. I confess I belong to the latter class; for although I admire the excellence of the original design of the Veterinary College, and am sensible of, and grateful for the advantages which it is capable of bestowing, I see many faults which its infancy did not predict, and which its maturity ought not to possess.—W. Youatt (1830) (*The Veterinarian*, **3**, 276), in a speech at the Second Annual Meeting of Veterinary Practitioners, April 22nd, 1830.

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". . . First, as veterinary science has progressed in proportion as more accurate knowledge of it has been obtained and circulated, it is absolutely necessary that an efficient system of public education should be carried out, in order that a more extended acquaintance with the veterinary art may be acquired, and the profession at large essentially benefited. . . .

"But . . . secondly . . . veterinary knowledge has been increased by the testimony of many; so are the discrepancies which at present prevail in it likely to be reconciled—the future education of its members improved—and the progress of the science generally accelerated, by an association of its members. . . .

". . . thirdly . . . as veterinary science has been promoted and upheld by the respectability of many of her members, it is incumbent upon all to show to the world by their character, example, and influence, that we aim at that station in society which her sister science enjoys. . . ."—Thomas Walton Mayer (1838). *The Past and Present State of Veterinary Science.* VII. (*Veterinarian*, 1838, **11**, 74).

II. The Place held by the British Veterinary Profession in the World To-day

Were world conditions different at this time, the occasion of our Centenary would have been marked by a friendly exchange of greetings with the veterinary professions of other countries. Each country, we are certain, would have delivered a suitable short message indicating the path its own veterinary profession has traversed, with the signposts it has noted along its journey to follow for sure achievement, and each message would have contained as well an expression of the measure to which our colleagues felt indebted to our own country in some degree in return for also showing a way.

We on our part are deeply aware of the debt we owe to other countries. Did not France become the cradle of modern veterinary education when the first veterinary school was founded at Lyons in 1762? And we recollect that the first principal of a British veterinary school, namely, the London Veterinary College founded in 1791, was a Frenchman, Sainbel. For long years afterwards, veterinary education in Britain, "starved of State support" and neglected by the public, but progressing through the sturdy confidence of the practising members of the profession, fed nevertheless, it has been lamented by one of our greatest veterinarians, on "crumbs dropped from Continental tables." The measure of our indebtedness through that long period to the brilliant teachers employed at the great State-endowed schools of the Continent has been indelibly written in the literature available for our own teaching. Happily, circumstances have changed, but only within the memory of those now living, and now we can regard ourselves as the equals in most respects of the most fortunately situated of our long-favoured colleagues abroad in the matter of output of contributions to new veterinary knowledge. We need not, for that reason, be it said at once, view the present situation with complacency, because we have still far to go before we ought to feel truly satisfied that the best has been done that can be done. That is evident from the intensity of the interest taken by members of the profession at the moment to secure the desired advancement. There are those who share this intensity of interest and yet view the prospects of that desired advancement along very different vistas. Because they view them differently, there is prevailing, we sincerely believe, good sense enough on all sides to respect those who may give utterance to views that are divergent, as holding them genuinely. For in recognition of all that that means and entails lies our hope of fostering a healthy professional attitude towards our problems and of achieving a real unity.

The British veterinary profession, in spite of all that has been said, with truth, about its dependence for many things upon the advances of its brethren abroad, need, however, not feel ashamed of its record, or even of its contribution to veterinary advancement in the world. We need only briefly refer to a few of its contributions. In hardly any other country has the veterinary profession become organised into a corporate body held in such high public esteem. This was abundantly evident to the delegates to the International Veterinary Congress held in London in 1930. In very few countries has the veterinary profession gained such authority in the public service in the matter of controlling the great epizoötic diseases. That authority has been won through sound judgment and well-disciplined effort, which in return has aroused the general confidence of the public. To start the veterinary service sorely needed for the economic development of a large overseas Empire, Great Britain has throughout the century provided, through the inspiration of a few splendid teachers, from Dick to M'Fadyean, gifted men of sterling character who had abundantly proved their worth within the territory to which they consecrated their careers.

Many of those territories are now self-governing Dominions, with their own indigenous veterinary cadres. The record we present later in this issue of the development of the veterinary services in some of these Dominons will read, we are sure, as a series of romances of veterinary achievement.

Separated though that country as a "colony" became from us nationally many years before the grant of our Charter, the United States of America, perhaps more than any other country, has often generously expressed her indebtedness to the British graduates who ventured there to help lay the foundations of a veterinary service whose record since then has been so magnificent.

What we feel to have been the real achievement of the British veterinary profession, has been the examples given to the world at large of robust application of the knowledge available faithfully to serve the best interests of the public in a way that has begotten the confidence of that public. This characteristic we believe can be detected in the tone of the tributes we print at this stage which are forthcoming from two highly distinguished American colleagues. The first of these is the renowned editor of the *Journal of the*

American Veterinary Medical Association. In a covering letter he writes: "Although I have lived through the major portion of the period covered be assured that the material is not based upon personal reactions as much as upon prevailing impressions." The second is from the head of the American Army Veterinary Service in Europe, whose presence among us has often been most felicitously greeted at our gatherings.

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American Veterinary Medical Association

A Message from the Editor of its official Journal

English-speaking veterinarians will certainly thank *The Veterinary Record* for commemorating the founding of the Royal College of Veterinary Surgeons a hundred years ago. In the United States our profession has never ceased to venerate the Royal College as the source of its early literature and leadership. Despite the influx of Continental people and thought as our population grew from 18 to 132 million, our veterinary service remained decidedly British. We went to the colleges of Andrew Smith and Duncan MacEachran in Canada and we brought home the works of the British authors to pursue our graduate studies. Moreover, it fell to the graduates of the British schools to found our system of education and to mould the pattern of our ethics and work.

Language is a strong tie between nations and affairs within them, but that alone does not account for the abiding alliance between British and American veterinarians. At the turn of the century when German science was claiming attention and our leading journal was extolling the virtue of Lyons and Alfort, the reaction on our emotions was practically negative. Proof that we stayed British was expanding the jurisdiction of our national association to the Dominion of Canada when, in 1898, the U.S.V.M.A. was renamed A.V.M.A. A large percentage of the personnel facing the task of developing a competent veterinary service were Canada-made as in former decades our foremost leaders were of Great Britain. Even the alumnus of Toulouse—Alexander Liautard—who founded our first viable veterinary college in 1875, surrounded himself with an English-made faculty. None of us has ever questioned that the early architects of our veterinary structure and the inspiration of our professional conduct were of Edinburgh, Glasgow and London. One marvels at the leadership that gave Canada and the United States a workable check on livestock diseases without a subsidised veterinary education as a starting point. Lack of a periodical literature was also an obstacle that Britain and France had already removed. Only the semi-annual meetings of the national association (U.S.V.M.A.) kept the forming profession in order and these started in the 1860's only, or twenty years after the Royal College of Veterinary Surgeons was founded. Yet Canada and the United States are reputed to have become safe places to raise farm animals, obviously through the determination of the pioneer veterinarians to conquer livestock diseases, *ex necessitate rei*, under the extraordinary confusion of an unprecedented increase of the human and animal populations following the Civil War (1861-1865). There were no native veterinarians until Andrew Smith graduated there in 1866. When the Royal College was founded (1844) our population was 18 million with neither veterinary college nor service to plan against the diseases of livestock. In the 1850's when the population was 26 million attempts to establish veterinary faculties were abortive. In the 1860's with a serious rebellion raging in a population of 31 million, the American people were experiencing a grave shortage of food. Contagious pleuro-pneumonia of cattle, hog cholera, bovine piroplasmosis (Texas fever), equine influenza and glanders, verminous gastritis of sheep, bovine tuberculosis, and lesser ailments, lack of transportation and refrigeration, and distance were depleting the food and clothing supply to a dangerous level. Soldiers ate a farinaceous biscuit appropriately called "hard tack," and General Grant complained that the clothing of his soldiers "melted in the rain." It was this emergency that brought foreign veterinarinans to our country, aroused interest in veterinary education, and gave birth to the U.S.V.M.A. (June, 1861). But our veterinary service did not begin to take form until the coming of Professors John Gamgee and James Law from Scotland in 1868. Although Professor Gamgee's sojourn was short and its purpose advisory, it was fruitful in having warned our official circle about the potentiality of existing animal plagues and discussing plans for their control. His colleague, James Law, who arrived the same year, remained to wield a powerful influence in shaping the destiny of our veterinary service until the time of his death at ripe old age in 1921, and beyond. One may credit James Law, unchallenged, for being one of the founders of the United States Bureau of Animal Industry (1884), of which one of his pupils—D. E. Salmon—became the first chief. The reports of John Gamgee and James Law published in the 1870's seem to mark the starting point of the present idea that eradication of farm-animal diseases is feasible and extremely profitable on the long run. That in a nutshell has been the policy of the A.V.M.A. since James Law came into its councils, and this we write without prejudice to contemporary leaders. The growth of the United States during the centenary you celebrate could not have occurred but for the bold campaigns against infectious diseases of livestock. It was a growth of human and animal populations without parallel and of multiplying disease problems. Its main outward expression is the almost complete extermination of an ixodic parasite from a vast area, the practical liquidation of animal tuberculosis, the campaign now waging against brucellosis, the elimination of scabies in the range country and the application of the same principle—eradication—against all of the livestock diseases, which was fortunately indoctrinated by these scholarly pioneers. While these contexts may seem excessively panegyric, they are not over-stated in the light of the unfailing food production of the present period. Be assured that the officers and members of our national association would be gratified to see the highlight of its history recorded in the centennial report of the Royal College of Veterinary Surgeons, as follows:—

(1) Organised in the midst of a great war characterised by shortage of food and clothing for the armed forces and civilian population and by extraordinary losses of horses and mules from influenza and glanders. The first meeting, held in New York City, June 9th, 1863, was a convention called to protest against the lack of systematic effort to control diseases of animals.

(2) In the absence of veterinary schools in North America (the Toronto, just founded, was still unknown), the governments (Federal and States) were urged to encourage the immigration of graduate veterinarians from foreign countries and to give veterinarians a respectable status in the army for the declared purpose of reducing losses among army animals and preventing them from spreading disease among civilian animals.

(3) The founding of dogmatic veterinary education was advocated, as a private enterprise if necessary, since public support of veterinary faculties seemed beyond expectation. The effort first bore fruit in the form of several short-lived faculties in the 1860's (New York, 1864, Chicago, 1865; Cornell, 1868) and the founding of chairs of veterinary science in the State agricultural colleges. All of these and minor ones soon died from lack of students and resources. Cornell, headed by James Law, soon died out as a veterinary school but was re-established as the present New York State Veterinary College in 1896. The country was not ready for higher veterinary education, so private schools had to assume the responsibility of furnishing the country with veterinarians, establish a profession, organise and man associations, and promulgate licensing laws.

(4) The national association founded the *American Veterinary Review*—in 1877 (now J.A.V.M.A.) which at the present time is publishing its 105th volume. Sworn paid circulation as of July, 1944, 9,299. (There was an interim period preceding 1915 when the Journal was privately managed).

(5) Incessantly from the time of its organisation, the Association laboured for the founding of the United States Bureau of Animal Industry with a veterinarian as its chief, to replace an unworkable division of agriculture of limited authority. This was fully achieved through an Act of Congress in 1884, and D. E. Salmon, sole graduate of the Cornell Faculty, was appointed as its chief.

(6) Early in its history, the national association protested against the lack of governmental attention to meat inspection on the ground of the exclusion of American meats in certain foreign markets and for the benefit of public health. As a consequence, a division of meat inspection was established in 1890 with graduate veterinarians, chosen by civil service examination, as the inspectors. The division was enlarged in 1906 and now inspects the major portion of the animals slaughtered.

(7) Beginning already in the 1870's, the Association pressed upon Congress the importance of improving the pay, allowances and status of military veterinarians. In 1879, a law requiring that the veterinarians of the cavalry arm shall be graduates of recognised veterinary colleges, and in 1916 commissioned rank from second lieutenant to maior was granted on the urge of the Association's Legislative Committee. Veterinary officers were then charged with the inspection of food of animal origin, and to prosecute sanitary inspection of animals surrounding military installations from which food of soldiers may be derived. As in World War II, this service is in force in far-flung parts of the world.

(8) Bovine tuberculosis control on the test and slaughter

plan was strongly advocated as essential to the development of the cattle industry and as an aid to public health services. The benefits derived led to the nation-wide campaign for total eradication which was started in 1917 and ended, practically complete, in 1941. Results: low incidence of animal and childhood tuberculosis and a more prosperous dairy-cattle industry.

(9) Vehemently and without letup, the Association backed the uplifting of educational standards. The two-year veterinary schools which seemed essential to furnish personnel for a non-existing profession were prohibited in 1895; the three-year ones in 1917; and in 1940 the collegiate requirement was raised to five years. The directing factor of these advances was the ruling of the national association which governmental agencies adopt as the approved standard.

(10) In World War II, pursuant to arrangements of the War Department for physicians, dentists and veterinarians, the A.V.M.A. is the delegated authority on the procurement and assignment of veterinarians for the military and civilian service, the objective being to equalise the personnel of both in the national interest. The central office of the Association is charged with directing the equalisation through official committees in each corps area command and in each state. Results: A well deployed veterinary personnel and sufficient veterinary officers for the armed forces. The high animal production of 1942, 1943, and 1944 (in some instances amounting to surpluses) is said to be due, in part at least, to the vigilance of the veterinary service, including that of the commercial laboratories.

A more recent project was the founding of the *American Journal of Veterinary Research* in 1940 for the purpose of encouraging original research in veterinary science and to furnish a medium to publish the findings, which are acceptable to council of experts. A strictly war-time project is supplying material for *Veterinary Science Newsletter* which the Office of War Information publishes for distribution among the United Nations.

Inasmuch as the foregoing seems boastful, it is apropos to explain that the A.V.M.A. is not the all-powerful dictator of the veterinary service in the sense that a general commands his forces. On the contrary, its status is non-official. It governs by influence in spite of itself. The United States is perforce a society-governed democracy. Every *metier* and profession is organised, quite solidly, and these govern the field they represent, and not perhaps. It's all quite simple. Officers, councils, committees, members, many of whom are federal, state or municipal functionaries, and all are colleagues, naturally carry into the government service precisely what the deliberations of their society teaches. In that way, the voice and acts of the associations are those of the government, in effect. Our political economists call that "administrative public organisation," meaning the power behind the throne. The A.V.M.A. is one of these organisations eighty-one years old and it functions unopposed.

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Army Veterinary Services

(b) An Appreciation from the Chief of the Veterinary Division, U.S. Army in Europe

No one could possibly appreciate his official position as Chief of the Veterinary Division, O.C.S., E.T.O., more keenly than I do. To officiate where contacts are made, as we say in military parlance, with our opposites, that is, with our professional colleagues, has been a most salutary and profitable experience. What is true of our military contacts is equally true with other control officials and agencies of the Governments to which we are unofficially accredited with their subordinates as well as private practitioners. I have yet to hear of an adverse criticism, except, of course, where it is justified and voiced not for mere criticism but with a constructive thought that would accrue to a full realisation of our joint efforts.

This very happy situation augurs well for future contacts and has been brought about, not particularly through the stress of war and intimate collaboration where questions of a somewhat distressing character arise, but fundamentally by those whose presence is no longer evident in person, but whose ideals have laid the groundwork for the very happy and cordial relations which exist.

Unfortunately, time and ready reference are not at our disposal to record in their proper sequence, men whose personalities and writings have been the corner stone upon which has been built the strong mutual superstructure now evident. That each country within its own sphere of activity has influenced the other can safely be stated. The young, virile country needed help and such was readily given by professional stalwarts of what some are proud to refer to as the Mother Country.

The virgin agricultural background of the young, growing country needed assistance in controlling evident and insidious diseases of its livestock industry, and nowhere could such help be sought except by applying to the old, established institutions. Some came and went, others remained and became the pathfinders for the progressive and determined veterinary profession that America possesses to-day.

The veterinary profession is coming into its own. There are some who persist in stating that it has arrived. I am not one of that class. The surface in many respects has only been scratched. The demand for educational facilities has opened up fields that were heretofore unobtainable to the veterinary graduate. The great names of our profession, on both sides of the Atlantic, bear evidence to the forethought and wise, protracted thinking which has made our profession the indispensable insurance for a healthy livestock industry, the basic industry of any society.

The educationally well grounded veterinarian with his knowledge and experience of allied subjects has made his presence tenable in all phases of human endeavour where animal life with its economic and collective well-being are so essential.

How true is this when we consider the planning necessary to suppress and eradicate diseases of the lower animal whose mere presence would be the difference between a healthy animal industry and one which might bring chaos and destruction !

The campaign in Italy lends credence to the fact that the animal still plays an important part in military campaigns. Protracted planning may not have been in the forefront, but when the mountainous fastnesses were reached, and it was realised that the man-made machine was not equal to the task, for strategic or terrain reasons, improvisation was in order.

Locally acquired animals filled the breach, and it is no secret to state that many boys who are lying with crosses at their heads would probably be with us to-day, or at least additional time would have been permitted them in their vulnerable exposed places if animals had been available to help and assist them in carrying necessary supplies to places more or less inaccessible for machines. Happily this condition did not obtain for any great length of time until corrective measures were instituted.

Creditable and reliable Army officers of both our countries have stated that animals for at least dray or pack purposes will occupy a very prominent place in future planning.

Animals are indispensable in certain phases of war and practical types difficult to obtain, hence it is manifestly important that a system of triage and salvage be instituted. This is now in effect and parallels in many respects the system for personnel as inaugurated by the Medical Corps. First aid through properly equipped and professionally manned dispensaries is set up with rear elements existing where more definite treatment may be given. Battle casualties receive what science has prescribed, while a critical watch is ever present for the evident and insidious infectious or contagious disease.

In America the control phases of meat and dairy hygiene whether considered from a national or local aspect, have been the means of permitting livestock control officials to foster stringent measures in dealing with this phase of our auxiliary service.

Food is the greatest factor in our economy, not money. It is hardly likely that any economist, sociologist or other thinker will attempt to controvert that statement of fact. Hence it must be realised that it is of paramount importance that the control of diseases is maintained, that foods derived from animal sources remain sound and palatable through means of sequential steps of inspection which are religiously watched, and advice and recommendations made in so far as the handling, transport, storage and issue to consumers are concerned.

The veterinarian, with his comparatively superior knowledge of foods of animal origin, has become indispensable as a distinct entity and further as a collaborator with medical conferees.

We believe our advice and suggestions initially made or those which may be made have been and will continue to be a marked contributing factor in lessening the extent of loss of perishable foods, the cause of such losses being of a physical, chemical or bacteriological nature. Particularly at this time is this important when we consider the prevailing short supply of animal proteins. With the rehabilitation of Europe a major problem will confront us in finding the source of animal foods as well as determining the rationalisation of distribution. Our profession, therefore, has taken its rightful place in affording essential aid in raising the standards of living and levels of nutrition. It is estimated that

38 per cent. of the soldier ration (American Army) is composed of meat, meat food and dairy products. It must be realised that perishable foods as we know them are prone to retrogressive changes from the time the animal heat is out of the carcase.

To lessen the loss and to have available such foods at a later date, and at a more distant point than place of preparation, various methods of preservation have been adopted.

A full realisation of the difference between preservation and conservation and their application to the food industry, unfortunately is not well understood or at least not appreciated in all its phases. Many people take food for granted, particularly when it is available on demand to satisfy their most fastidious wants; but do they realise the efforts expended in its preservation based on scientific research without which campaigns in the field could not be prosecuted nor even theorised? Food is a factor of no mean import. It is indispensable. Whether food is preserved by curing, smoking, drying, canning, cooking, refrigeration or a combination of one or more of these known methods, it is the cumulative result of many years of scientific and practical painstaking efforts. The method best suited for the purpose should be employed. It is a well-known fact that the suppression of diseases of certain characters has been the reason why the packing industry has reached its tremendous height as to production capacity. The productivity of the farm has permitted a wide scope of planning to encompass the millennium in having available supplies in such large quantities for both civilian and army needs. It is at this point that stress can be laid on the dependability of the packing industry on scientific findings which accrued to it through the veterinary profession.

The ultimate objective of our work as to production, preservation and judgment of foodstuffs of animal origin, is to safeguard the consumer. It may be presumptive to state that there is theoretical and much factual knowledge at hand to safeguard food supplies right up to the mouth of the consumer.

The evident close co-operation and collaboration so admirably knitted during recent months, it is believed, has been brought about by the ethical approach by those in authority to problems of a distressing character and the mutual respect colleagues of our respective countries possess for each other. Is it any wonder we are proud to be so intimately associated with the profession in this country? We have expressed our willingness to help in all matters in which we thought singly or in combination our efforts would bear fruit. Happily in no wise have we been disappointed. It has been stated that only through stress of great emergencies is the real worth of individuals and organisations realised.

That the profession of Veterinary Medicine and its individual members have demonstrated their work has been proven. This has been accumulative and brought about by emulating our forbears in all that makes an organisation great. Those who blazed the trail by their zeal have permitted those of us at present actively engaged in furthering our profession to evaluate their findings and apply them in a practical way for the collective phase of human progress and happiness.

E. A. Cubley

Colonel, V.C.,
Chief, Veterinary Division.

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The French Veterinary Profession

(c) From the Président du Conseil Supérieur de l'Ordre des Vétérinaires

La France s'honore d'avoir été le berceau de l'enseignement et de la médecine vétérinaire et de par le monde il n'est pas un vétérinaire qui ne connaisse et ne vénère le nom de Bourgelat.

Après la fondation de notre profession l'événement le plus mémorable, et le plus important pour l'avenir, a été la reconnaissance officielle du rang qu'elle s'était acquise par la Charte Royale de 1844 qui fonde le Royal College of Veterinary Surgeons.

Par cet acte, les vétérinaires de Grande-Bretagne sont maîtres de leur destinée, ils forment une élite et peuvent travailler à la progression sociale de leur profession.

C'est cet évènement capital dont les vétérinaires anglais commémorent le centenaire. Ils vont mesurer le chemin parcouru depuis un siècle, honorer leurs Maîtres qui de l'art vétérinaire ont fait cette science vétérinaire qui tient aujourd'hui une place si enviable parmi les sciences biologiques et rendre hommage aux générations de praticiens qui par leur travail, leur tenue intellectuelle et morale ont élevé leur profession à un rang si considéré parmi les professions libérales.

Les vétérinaires français sont heureux de s'associer à leurs confrères de Grande-Bretagne pour célébrer ce centenaire et de présenter au R.C.V.S. leurs plus chaleureuses felicitations.

La Charte de 1844 a été pour eux un exemple et un stimulant. Pendant longtemps ils ont travaillé à l'obtention de la reconnaissance officielle du rang atteint par leur profession. Les Sociétés Vétérinaires de Paris et de province, dont plusieurs sont centenaires se sont fédérées dans ce but qui fut poursuivi avec opiniatreté.

La Fédération a fait place au Syndicat National et c'est celui-ci qui a obtenu en 1923 la loi créant le Doctorat vétérinaire, titre qui sanctionne le niveau des études faites dans les Ecoles.

En 1938, la loi sur l'exercice de la Médecine Vétérinaire réserve désormais cet exercice aux seuls diplômés et en 1942 la loi crée l'Ordre des Vétérinaires.

L'organisation vétérinaire française rejoint donc maintenant celle de l'Angleterre.

L'Ordre des Vétérinaires auquel doivent obligatoirement être inscrits tous les praticiens et qui a la garde de la moralité professionnelle est le pendant du Royal College of Veterinary Surgeons.

Le Syndicat National des Vétérinaires qui a la charge des intérets professionnels correspond à la "National Veterinary Medical Association of Great Britain and Ireland."

On voit que les mêmes aspirations, les mêmes efforts dans nos deux pays de même culture et de même civilisation ont amené la même conception de l'organisation professionnelle.

Ce que nous venons de réaliser en France, la Charte Royale l'a fondé il y a un siècle. Le Royal College est l'aîné de toutes les organisations professionnelles comme la Grande Charte est l'aînée de toutes les constitutions démocratiques.*

Aussi saluons nous, avec un affectueux respect cette institution centenaire toujours jeune, toujours active et toujours exemplaire.

Des représentants des vétérinaires français viennent d'être reçus par la Société Vétérinaire du Sussex avec une cordialité qui les a infiniment touchés; à l'occasion de ce glorieux centenaire ils viennent aujourd'hui dire en quelle estime les vétérinaires de France tiennent les institutions vétérinaires anglaises.

Ces manifestations d'amitié doivent être le début de relations suivies et nous souhaitons vivement que s'établisse un contact permanent entre les organisations professionnelles de nos deux pays. En échangeant nos vues et nos projets, en étudiant en commun les moyens de rendre notre profession toujours plus utile et plus considérée, nous développerons notre amitié confraternelle, nous aiderons à une entente toujours plus cordiale entre nos deux pays, et en conviant les vétérinaires de toutes les nations à se joindre à nous, nous resserrerons les liens de toute la famille vétérinaire et nous contribuerons pour notre part à établir la paix dans le monde.

E. DEGOIS.

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From the Inspecteur Général des Ecoles Vétérinaires

Les Membres du Corps Enseignant des Ecoles Vétérinaires de France, qui ont la charge d'instruire et de préparer les jeunes vétérinaires à l'exercice de leur profession, ont évidemment comme premier devoir de s'informer de ce qui est fait dans le même domaine dans les pays étrangers.

A ce titre ils se sont toujours intéressés aux productions publiées dans votre pays, tant au point de vue de la culture générale que notre culture professionnelle vétérinaire. Aussi vos auteurs nous sont-ils familiers, aussi les avons-nous sur nos tables de travail à côté des nôtres, et souvent nous avons relevé le souci que vous aviez des réalisations pratiques.

Les échanges de nos revues vétérinaires, Recueil d'Alfort, Revue Vétérinaire, Bulletin de la Société de Vétérinaire Pratique, de la Société de Pathologie Comparée etc. . . . avec vos propres publications datent de leur origine même, et il y a ainsi entre nos deux pays un double courant intellectuel, profitable à tous.

Pourtant, à l'occasion d'une invitation que nous a faite récemment la Société Vétérinaire de Sussex, j'ai eu l'impression que les liens amicaux et personnels que nous avions noués, se devaient d'être les premières démarches de relations personnelles et culturelles beaucoup plus étendues.

En visitant votre Royal Veterinary College à Londres, en admirant votre remarquable centre de recherche sur les maladies des animaux à Weybridge, en prenant contact avec les éleveurs anglais si avertis, avec les vétérinaires praticiens qui ont la charge de maintenir le bétail et tous les animaux en bon état de santé, je ne pouvais m'empêcher de regretter que cette expérience ne fut pas étendue et généralisée. C'est là un sentiment qui ne m'est point seulement personnel, mais qui nous est venu à tous, lors de notre réunion de Brighton. Ce jour-là nous avons adopté le

* We have not presumed to offer in English translation what our distinguished French colleagues have so clearly expressed in the characteristic idiom of their own language, but we would like to say that the verdict here delivered entirely confirms the conclusion we had already arrived at after our historical analysis, namely, that, "*Just as Magna Carta is the first-born of all our democratic constitutions, so the Charter of the R.C.V.S. is the first-born of all our systems of professional organisation.*"

(*Concluded at foot of col.* 1, *page* 627)

III. The Royal College of Veterinary Surgeons

In the minds of many of its members and often in the mind of the public at large, the Corporate Body known as the Royal College of Veterinary Surgeons wields an influence which is very ill-defined. Through improper recognition of the scope within which that influence can be legitimately wielded in conformity with the powers which that Body has had conferred upon it, errors of two kinds can be readily perpetuated. Those of the one kind are perpetrated through failure to recognise to the full the measure of that influence derived from those powers. Those of the other kind are perpetrated through entertaining a specious belief that that Body can wield an influence which it has no warrant to display in the due exercise of the powers legally conferred upon it. This issue would, therefore, be incomplete without a re-statement of the powers now at the command of the R.C.V.S. as a Corporate Body. In the text which follows, contributors have summarised the relevant position under three main headings:—

(*a*) The R.C.V.S.: its legal position and statutory functions.
(*b*) The R.C.V.S.: its authority and disciplinary powers.
(*c*) The R.C.V.S.: its educational functions and the general features of British veterinary education.

(a) The legal position and the Statutory Functions of the R.C.V.S are defined, controlled and regulated by the Veterinary Surgeons Acts, the Royal Charter of Incorporation, various Supplemental Charters, and by the by-laws made by the College itself.

The Royal Charter of Incorporation of March 8th, 1844.

By 1844 the Royal Veterinary College of London and the Veterinary College of Edinburgh, together had turned out approximately 1,000 certificated members, and seven of their leaders submitted a petition praying that, as the Royal Veterinary College had been of such great advantage to the country and the Army, a Royal Charter of Incorporation be granted to them.

By this being granted, the graduates of the two schools were formed into a body corporate.

To realise what the exact meaning of this was it may be well to explain that the word "corporate" simply means united in a body, and acting as an individual. A Corporation is a body politic or corporate authorised by law to act as a single person. The word "Charter," from the Greek, originally meant parchment or thick paper, but owing to the early use of the word it came to be applied from the substance on which it was written to any document, granted by a King or a Prince, conferring or acknowledging privileges to be enjoyed either by the whole or a portion of the people under his rule.

Therefore this Royal Charter was a privilege granted to be enjoyed by that portion of Queen Victoria's people who were graduates of the two veterinary schools.

It formed those graduates into a corporate body with the title of Royal College of Veterinary Surgeons. It declared that the practice of veterinary medicine was a profession, that the members of the College were solely and exclusively members of the profession of veterinary medicine and surgery, and that they were to be individually known and distinguished by the name or title of Veterinary Surgeon. The Charter also made provision for the government of the profession; the election of a Council and officers; the examination of the students of the existing colleges and of such other colleges as might in the future be affiliated to the Royal College by Royal Sign Manual; and the admission of successful students to be members of the Royal College of Veterinary Surgeons.

Together with the Supplemental Charters of 1876, 1879, 1883, 1892, 1914, 1923 and 1932, this Royal Charter remains substantially in force.

The Charter of 1876 laid down conditions for the establishment of the Fellowship of the R.C.V.S., and for the removal of members from the College.

The Charter of 1879 admitted as members the holders of the certificates given by the Highland and Agricultural Society.

After receiving the Charter of 1844, it was soon realised that to obtain the full benefit from it it would have to be confirmed by Act of Parliament. There followed a long drawn-out struggle by the Council to get such an Act. In 1853 a Bill was before Parliament to give effect to the Charter, but it was not until 1881 that the College was successful.

The Veterinary Surgeons Act, 1881. An Act to amend the law relating to Veterinary Surgeons, August 27th, 1881.

The Act aimed at suppressing quackery, and how necessary this was can be judged from the fact that about the middle of last century the 1,000 veterinary surgeons then in existence in this country were outnumbered by quacks by at least three to one! The Act was brought in because it was deemed expedient that provision be made to enable persons requiring the aid of a veterinary surgeon to distinguish between qualified and unqualified practitioners. It should never be forgotten that this Act was obtained by Dr. George Fleming, C.B., LL.D., Inspecting Veterinary Surgeon of the Army. [It has never been made clear whether the cost incurred in getting the Act on to the Statute Book was paid for out of his own pocket, or financed by the R.S.P.C.A.] To carry out its purpose the Act provided for the establishment of a Statutory Register, and prohibited the unqualified using any title or description stating that they were veterinary practitioners, or possessed skill, or were specially qualified, in the medical and surgical treatment of animals.

The Sections of the Act dealing with this aspect are 16 and 17.

Section 16.—If any person not being a Fellow or Member of the R.C.V.S. takes or uses any name, title, addition or description, by means of initials or letters placed after his name, or otherwise, *stating or implying* that he is a Fellow or Member of the R.C.V.S., he shall be liable to a fine not exceeding £20.

Section 17.—If any person other than a person on the Register of Veterinary Surgeons takes or uses the title of Veterinary Surgeon or Veterinary Practitioner, or any name, title, addition or description *stating* that he is a Veterinary Surgeon or a practitioner of Veterinary Surgery or of any branch thereof, or is specially qualified to practise the same he shall be liable to a fine not exceeding £20.

N.B.—The great weakness in this Section 17 is the omission of the two words, "or implying," after the word "stating." The result is that if any unqualified person refrains from *stating* that he is a Veterinary Surgeon, or a practitioner of Veterinary Surgery, or of any branch thereof, or is specially qualified to practise the same, there is nothing whatever to prevent him *implying* that he is! The 1881 Act also provides that only those on the Register can sue in a Court for fees due for acting in a veterinary capacity.

Another provision of the Act took on to the Register 866 unqualified persons who could show that they had practised as Veterinary Surgeons for five years before the passing of the Act.

The Veterinary Surgeons' Act, 1900, extended the disciplinary powers of the R.C.V.S. to include holders of the Veterinary Certificate of the Highland and Agricultural Society.

The Veterinary Surgeons Act, 1920, provided that every member practising in the United Kingdom must pay to the R.C.V.S. £1 1s. 0d. annually on April 1st.

The Veterinary Surgeons (Irish Free State Agreement) Act, 1932, confirmed and gave effect to an agreement with respect to the registration and control of Veterinary Surgeons in the Irish Free State.

. . . . . .

(b) Authority: Disciplinary Powers of the R.C.V.S.

Professional discipline is maintained by the Council having been given power under Royal Charter and Act of Parliament to remove a member's name from the Register.

The Royal Charter of 1876, Clause 12, provides that the name of a member cannot be removed by any meeting of the Council unless at least two-thirds of the 36 members of Council are present and at least three-fourths of the members present vote for the motion of removal.

This clause of the Royal Charter of 1876 was confirmed by

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principe, d'échanges de vues et d'échanges de personnes beaucoup plus actives que par le passé.

J'ai particulièrement retenu les offres faites à nós jeunes chercheurs dans vos laboratoires. Rien n'est plus profitable que d'aller travailler dans un laboratoire étranger, au contact de maîtres éminents, pour s'initier à des courants de pensée originaux, à des techniques nouvelles, à des programmes nouveaux.

Réciproquement nous serons heureux d'accueillir en France dans nos Ecoles et dans nos divers centres de Recherches ceux des vôtres qui seront tentés par ce déplacement. La guerre, qui vient seulement de se terminer, a supprimé pendant six ans toutes ces possibilités. Le moment est venu, malgré le difficultés matérielles dont nous souffrons encore, d'organiser ces échanges. Je me mets personnellement à votre disposition pour faciliter cette tâche.

Je reviens aussi sur une proposition qui avait eu à Brighton l'agrément de tous, celle de l'échange de nos enfants, que seraient reçus dans nos familles respectives, pourraient ainsi dans les conditions les plus favorables s'initier à la connaissance d'une langue étrangère et de la vie du pays voisin.

Comme mon confrère et ami, M. Degois, je m'associe à la célébration de votre centenaire professionnel, et formule les voeux les plus amicaux pour la prospérité du Royal College of Veterinary Surgeons.

Marcel Petit.

Section 6 of the Veterinary Surgeons Act of 1881, but the circumstances under which such removal could take place were restricted to four cases only:—

(1) Where a member requests that his name be removed from the Register.

(2) Where a name has been accidentally, inadvertently or fraudulently entered on the Register.

(3) Where a member whose name is on the Register has been found guilty and convicted of any offence by a Court of Law which is a misdemeanour or more serious offence.

(4) Where a registered member has had proved against him conduct that is disgraceful to him in a professional respect.

Every member who signs the roll of members solemnly declares that he will observe and comply with the Acts, Charters, and By-laws of the College already made or which may thereafter be made.

The R.C.V.S. is a corporate body armed with such powers as have been given it by Charter and Act of Parliament and By-laws made by it will be upheld in the Law Courts and cannot be ignored with impunity.

The Registrar of the College will be notified by the Home Office, or someone under that office, *i.e.*, Prison Governor or Chief Constable, whenever a Registered Veterinary Surgeon is convicted of a misdemeanour or higher offence. It is then the duty of the Registrar to bring the conviction to the notice of the Registration Committee as soon as it meets

. . . . . .

(c) The Educational Functions of the R.C.V.S. and the general features of British veterinary education

The course of organised veterinary education since it was first introduced into this country in 1791, has been materially influenced by the fact that its maintenance and development have depended until very recent times almost entirely on funds which the several teaching centres have managed to raise by their own devices. The money available, most of it derived from students' fees, has never sufficed to provide more than the bare essentials and at one period of our history just over 100 years ago the pernicious policy especially at the London school to attract as many students as possible became pursued so keenly that not even the maintenance of the originally devised proper educational standards was allowed to stand in the way. Abuses of this kind in the schools led to a situation which, had it been allowed to drift, must soon have brought the veterinary art into utter disrepute. The danger was, however, averted by a course of action which as can now be realised was destined to have a far-reaching effect on the subsequent development of veterinary education. A petition for a Charter of Incorporation preferred by a movement among members of the profession led to the Royal College of Veterinary Surgeons being constituted in 1844 and entrusted with important functions in regard to the government of the profession, the examination of students of the then existing schools and of such other schools as might in future be affiliated to the Royal College by Royal Sign Manual, and their admission to be members of the Royal College of Veterinary Surgeons. The College was thus invested with powers which placed it in a position of special responsibility in regard to education, and it is now generally conceded by those qualified to judge that it has exercised those powers with wisdom and ability in the interests of the profession and of the community it exists to serve. The extent to which it has been necessary to widen the course of study for the Diploma of membership of the College during the last 100 years is in itself a measure of the development which has occurred. As prescribed in 1844 this occupied two sessions at the end of which there was a practical examination. In 1851 the scope of the examination was extended somewhat and in 1873 two examinations were instituted, one at the end of each session. In 1876 the course was extended to three years and three examinations were prescribed. In 1888 evidence of a satisfactory standard of general education was demanded before admission to the course and the professional examinations were again extended in scope. A written examination was introduced in 1892 and in 1895 a four years' course was instituted. The present five years' course has been in operation since 1932 and certain of its features that may require adjustment have already been under review.

The duties of the Royal College in respect of education have not been confined to prescribing the course of study leading to examination in the different subjects of the curriculum but have included responsibility for the actual conduct of the examinations; this has been exercised through examiners appointed by, and directly responsible to, the Council of the College. In this way a very effective, though indirect, influence on the trend and efficiency of veterinary teaching has been maintained.

As the true test of an educational system is afforded by the achievements of its graduates, it would seem to be a significant fact that the M.R.C.V.S. diploma has for long enjoyed a reputation at least equal to that of any veterinary qualification in the world. How this has been earned by the success which its holders have achieved in the various fields of professional activity at home and abroad is plainly shown in this Centenary number and perhaps the only point which calls for special emphasis here is the all-important part which graduates from this country have played and are playing in fostering the establishment of veterinary education throughout the British Empire and beyond. The profession could hardly have benefited so largely from the Charter of 1844 had not the Royal College enjoyed the loyal support of its members and the full co-operation of the Schools. Though the latter have not been directly represented on the Council, members of their teaching staffs elected in an individual capacity have always participated fully in its work, particularly on the educational side. Special mention should be made here of the late Sir John M'Fadyean who by his example did more than any other man to set the standard of teaching, and by his researches notably advanced the knowledge of animal disease. In spite however of the good work accomplished by the joint efforts of the Royal College and the Schools, it has been apparent for many years that progress in the development of veterinary education was tending to become more and more restricted owing to lack of funds. Official circles have long been warned that the Schools would not be able to maintain a supply of men well trained in all fields of veterinary activity unless they were assisted from public funds in the creation of adequate facilities for teaching and research. As early as 1913 a report presented by the Hopkinson Committee—a Departmental Committee on the Public Veterinary Services appointed by the Board of Agriculture and Fisheries—stressed the shortage of veterinary graduates suitably trained for employment in the public veterinary services at home and overseas and recommended State aid to institutions devoted to veterinary education. In expressing the opinion that "the shortage of highly qualified teachers of veterinary science is a serious matter for the public service" the Committee showed that it appreciated one of the worst consequences of starvation of an educational system. In the same year the Haldane Royal Commission on University Education in London recommended that subject to certain conditions the Royal Veterinary College might be admitted to the status of a University Department. An Advisory Committee on research into diseases of animals appointed in 1920 by the Development Commissioners under the Chairmanship of Sir David Prain found that at that time "the veterinary colleges were starved for lack of adequate State support" and that "after full enquiry as to the adequacy in point of accommodation and situation of the existing veterinary colleges, the educational work carried on in them should receive a substantially increased measure of government assistance." Further that "having regard to the position held by this country in the stock-breeding world such a condition of affairs" (as that in which the aggregate subsidy for 1920-21 for research purposes amounted to only £2,696) "constitutes a national disgrace." This Committee also suggested that it might be an advantage if the veterinary colleges were affiliated to the universities concerned.

Though the recommendations contained in these important reports did not lead directly to any fundamental improvement in the facilities for veterinary education they undoubtedly foreshadowed important events to come. In the first place, after attention had been drawn by the Lovat or Colonial Services Committee (1928) to the parlous condition of the Royal Veterinary College the Ministry of Agriculture set up a Departmental Committee in the following year under the chairmanship of Sir Charles Martin to consider the question of its reconstruction and it was recommended that it be rebuilt on its existing site at a capital expenditure of £325,000 (the Ministry of Agriculture to contribute on a £ for £ basis) and provided with substantial sums from public funds for maintenance and for the conduct of research. Secondly, whilst this rebuilding was still in progress the Government appeared to realise that the problem of veterinary education was of such magnitude that it could not be settled by the rehabilitation of one college alone and appointed another Committee (which became known as the Loveday Committee) to review the whole question of the facilities available at the several veterinary schools and the provision that should be made from public funds in aid of their maintenance expenses. The Committee reported in 1938 that veterinary education had been starved for funds and that considerable expenditure would have to be faced if the resulting defects—overcrowding of the schools, inadequate and poorly paid teaching staffs and insufficient facilities for clinical and practical training—were to be made good. They recommended that veterinary education should be brought into closer connection with the universities and that students should have the opportunity of taking a degree in science on their way to the professional qualification

by passing examinations in the subjects of the first three years of their course. On the financial side a capital expenditure of £299,000 and recurring grants rising to £61,000 odd per annum were suggested. Owing to the outbreak of the war full consideration of this report was deferred but in 1943 the Committee met again at the request of the Minister of Agriculture in order that they might review their earlier recommendations in relation to the great changes which had meanwhile occurred in the position and prospects of agriculture in this country. The result was a second report published in April of the current year and containing proposals very much wider in scope than those originally made. To meet an anticipated increase in the number of graduates required per annum, the provision of two new training centres was considered necessary. "Convinced that the best possible training for veterinary surgeons can be secured only by persuading universities to undertake responsibility for that training" the Committee recommended that "veterinary studies should be given full university status, a degree becoming a registrable qualification" while corresponding modifications were to be made in the functions of the Royal College of Veterinary Surgeons and in the composition of its Council. The recommendation, contained in their first report, that a field station be provided for each school was reiterated and stress was laid on the importance of having an adequately equipped and staffed hospital for large animals on each field station.

Though some of these proposals have proved to be highly controversial—indeed, a majority of the profession has expressed strong opposition to universities being given the right to institute a registrable degree—the prospect of veterinary education being more closely associated with the universities has been generally welcomed and so has the financial provision which is recommended. The Committee roughly estimated that the cost of giving effect to their proposals was likely to amount to £2,000,000 capital expenditure at post-war rates with additional recurring expenditure of £210,000 per annum. These figures afford some idea of the extent to which veterinary education has been neglected in the past by the State; they also reflect the widespread realisation that veterinary services are indispensable to the well-being of agriculture—a view which is now so general and has been expressed so freely in responsible quarters that no Government henceforth could refuse funds for education on the scale which is recommended. It can be confidently assumed, therefore, that veterinary education is at last to be freed of the handicap which has so long retarded its progress and that it ought in future to enjoy much greater opportunities than it has ever known. Its efficiency will depend, however, not so much on the fact of its being conducted within the universities as on the skill and foresight shown in its organisation. Little or no advance is likely to be attained unless certain essential conditions are observed. For example, *The Lancet* in reviewing the second Loveday Report pointed out that all the subjects of the veterinary course, with some possible exceptions in the first year, could only be taught properly to veterinary students by veterinary surgeons who are familiar with their particular application to veterinary problems and who possess the facilities and inclination to pursue their studies on the animals concerned. Such an arrangement would also be the most likely way of surmounting the practical difficulties involved in securing proper integration of preclinical and clinical studies on which the efficiency of veterinary training so largely depends. As the clinical years are to be spent mainly at a field station away from the more academic side of the teaching this is a matter which will evidently require the closest possible attention.

Weekly Wisdom

"*Whatever may have been done to increase the public stock of knowledge in other departments, the veterinary science hath been hitherto little cultivated in this country; nevertheless, if its claims to public favour were fully stated, there could be no doubt but that our national spirit and benevolence would patronise it equally with every other branch of natural knowledge.*"—From *An Account of the Veterinary College, from its Institution in* 1791. London, 1793 (ascribed to John Hunter).

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At the first meeting of the Trustees of the Kenya National Parks, the Governor, Sir Philip Mitchell, announced that the scheme to establish parks in the colony will soon be put into effect. He said that the ideas of the Government for a Kenya National Park are moving on bold and imaginative lines, and that the scheme is an integral part of the colony's post-war development planning.—*Colonial Office News Service.*

IV.—The British Veterinary Colleges

(a) The Royal Veterinary College and Hospital, London.

In 1785, the Odiham Agricultural Society, which comprised the farmers between Basingstoke and Aldershot, where the little village of Odiham lies, began to discuss ways and means for encouraging the study of scientific farriery.

It is worthy of note that this society of farmers felt the need for this early form of veterinary work so much that, in 1788, they published an appeal lamenting that there was not yet in England any establishment that could give them the desired improvement in farriery by a regular education in that science upon medical and anatomical principles. The society expressed its intention, if sufficient funds could be raised, of sending two or more students to be trained at that then famous Alfort School, near Paris. Farriery had by then attained upon the Continent something of the dignity of a science and study. Schools were in being at Paris, Lyons, Vienna and Hanover, and it is not without interest and possible significance, in view of later developments, that at that time our own monarch, King George III, was also Elector of Hanover.

It was shortly after this determination of the Odiham Agricultural Society that Charles Vial St. Bel, of the Royal School at Lyons, came to England and outlined a plan for establishing an institution in this country to teach the science of veterinary medicine. He returned to France, but early in the following year a meeting was convened at the Coffee House, Bond Street, under the presidency of His Grace the Duke of Northumberland, which was attended by noblemen, gentlemen and scholars, who resolved to erect themselves the Veterinary College of London; and Mr. St. Bel was appointed Professor of the College.

With the realisation of this plan and the actual establishment of the College, the Odiham Society, which had done such splendid pioneer work, magnanimously decided to drop their project, send all their papers to the new College and direct their subscribers to transfer their subscriptions to the new institution.

These proceedings were of relatively small importance in the days in which they took place, but they were vital in the history of the fine modern building which was opened by His Majesty the King on November 9th, 1937. The letter written by the Duke of Northumberland to Mr. Huntingford, the Secretary of the important meeting which brought the College into being, will, in these circumstances, be of interest to those who know the Royal Veterinary College in these days of King George VI. His Grace of Northumberland wrote:—

"As the plan for establishing a Veterinary College seems now to be considerably amended, especially by the determination of annually publishing their 'transactions,' the Duke of Northumberland will be happy to promote so useful an undertaking, and should feel himself obliged to Mr. Huntingford if he will let him know the largest sum that any person has subscribed, as he shall be desirous of giving effectual support to a plan which now appears calculated to be of the greatest utility to the public. Mr. Huntingford will please send as soon as he can the answer to Northumberland House, that the Duke may pay his subscription."

His Grace was informed the largest sum at present subscribed was 20 guineas and that several noblemen had not yet determined upon the amount they would give. The Duke replied:—

"Sir,—As you inform me that no person has subscribed more than 20 guineas, in order to show my desire of being useful to the intended institution, I have enclosed a draft on Messrs. Hoare, of Fleet Street, for 50 guineas, and made it payable to you or your order. I must therefore desire you, Sir, to apply the above sum to the use of the Veterinary College as my subscription. . . ."

And so the Royal Veterinary College obtained its first powerful patronage, and at 6 o'clock in the afternoon, on Friday, April 8th, in the year 1791, the first Constitution was adopted and many influential noblemen and gentlemen were unanimously elected as the first officers of what was to become the leading Veterinary College of a greater British Empire than was ever thought of in those far off days of George III.

The new College was wonderfully fortunate in the choice of its first professor. Charles Vial St. Bel was a Professor of Veterinary Medicine in the Royal School at Lyons, which was the first veterinary college in the world. St. Bel was an outstanding man of wide vision and great scholarship, a worthy preceptor of an institution that was destined to become great. St. Bel laid foundations in more ways than one. As Principal he saw the erection of the first building, in 1791, upon the site which the College occupies to-day, and some of which were still housing the work of the College so lately as 1927.

These were the days of Dickens, who lived not far away, at Somerstown. The College itself was right in the country, London came no nearer than Holborn, and the little building stood in the meadows beside the River Fleet, which still runs in its vast pipe below part of the College site. A little bridge crossed what was then a pleasant river opposite the College and led to the Principal's house upon the other side, and close by was a track that led to Highgate Village. The great roads to the north ran within sight of the College. Quiet nights in that neighbourhood from time to time were interrupted by the command to "Stand to deliver," and the merry notes of the coachman's horn would make early students of veterinary medicine look up from their tasks and think of other things than the science of farriery.

Imagine cows grazing over the land occupied by the vast goods yards that you can see from the roof of the College building to-day. Picture summer days and the sound of reapers at their work coming from the meadows on the other side which now resound to the busy traffic of Camden Town. The first equine patients of the College grazed in the fields round the building and waded in the river which now runs in its subterranean pipe.

There were 14 students in those days and the course was of two years' duration. There were no vacations and discipline was of the strictest nature. We wonder how it would be appreciated by the students of the College to-day! Visits to the neighbouring town of London were strictly forbidden. In the light of modern conditions, at any rate, the life of a veterinary student in the days of George III was one of rigid discipline. They lived in the houses of the teaching staff. They had to be within the College before 8 o'clock at night, and rigid rules and regulations bound their every movement.

One singular thing emerges—and it is tribute to that great man, St. Bel—that the College curriculum of those days, short though it was, comprised, as far as the science of the times allowed, the main principles of the College course to-day. When you think that this was long before the age of "ologies," it is remarkable testimony to the ability, talent, foresight and scholarly enthusiasm of Charles Vial St. Bel, whose death in 1793 was well-nigh a death blow to the institution that was so near to his heart.

St. Bel was the only really trained veterinary surgeon in this country at the time, and his death was a setback from which it took the College very many years to recover. The death, too, was one of the great tragedies of science, for St. Bel unquestionably died of glanders, which he contracted from a horse. No man was ever more a martyr to the science to which his life was devoted than Charles Vial St. Bel. He died, as he had lived, at work for the development of veterinary knowledge.

The advent of Charles Spooner as Principal, upon the death of Sewell in 1850, marked the beginnings of a period in which additional buildings were embarked upon. This was about 1860. The surroundings of the College were changing. London was creeping out. The coaches were giving place to that new and noisy invention of Robert Stephenson's. Railway lines began to run across the meadows. The whole district was becoming urbanised. It was a time of change and development, both within and without. Soon after the appointment as Principal of James Beart Simonds, the diseases of cattle were included in the work of the College, which had hitherto dealt only with horses.

It was in this period, during the year 1875, that the College received its first Charter of Incorporation, which was granted to the Royal Veterinary College by Her Majesty Queen Victoria. That was followed by still further development. New buildings and a new lecture theatre with laboratories were completed some four years later, and opened by His Royal Highness the Duke of Cambridge.

The year 1892 marked another landmark in the history of the College with the appointment to the staff of the College of Sir John M'Fadyean, who subsequently became Principal in 1894. He came as a keen and enthusiastic disciple of Pasteur and Koch. He it was who applied so much of the work of those great scientists to the enlightenment and development of veterinary science. His researches into tuberculosis, glanders and Johne's disease were accepted as basic and became standard work in veterinary science. He was a man or rare skill and great attainment and brought the College academically and practically to a point at which it proved to be of great and inestimable service to the nation during the Great War.

That time of national trial proved epoch-making to the Royal Veterinary College, as it did to so many other great institutions. Whilst bringing out the best in many ways, it also exposed weaknesses, started new policies. During the Great War the Royal Veterinary College carried on training veterinary officers for the British Army and the Dominions' Forces, and officers from both made use of the College to take the diploma of "M.R.C.V.S."

The end of the Great War saw the emergence of the Royal Veterinary College with a higher academic standing than it had ever had before and with a great record, of which the College may be justifiably proud, of service in the training of men for the purpose of the nation and of the Empire. But it emerged also with sadly depleted resources. The generosity of the relatively few people who were interested in veterinary science was well nigh exhausted. There were no endowment, no funds. The buildings were in the last stage of dilapidation and decay. The staff was too small, and gravely underpaid, and its members had made great sacrifices for the continuance of a work which they all had deeply at heart.

In 1930, representations to His Majesty's Government resulted in an offer to provide £150,000 for the re-building of the College if a further £100,000 could be found by the Governors from other sources. The relatively small number of people interested in the College had made such great sacrifices for the continuance of the work in the trying years that had gone before, that the raising of so large a sum seemed to be extraordinarily difficult.

The Principal of the College, Sir Frederick Hobday, came to the rescue, and it was through his untiring efforts that the task was successfully accomplished.

The whole of the site, including the area to the north, which has not yet been built upon, was purchased from the Ecclesiastical Commissioners at a cost of £24,000. The old College has been completely demolished. The outlying portions of the new College, consisting of the Beaumont Hospital, the Canine and Animal Husbandry Blocks, the Pathological Museum Wing connecting the Research Institute with the new Main Block, the Reception Block, Ride and Post-Mortem Block were completed first.

The Beaumont Animal's Hospital for the treatment of the animals of the poor was the outcome of a legacy of £25,000 that was awarded by a Judge in Chancery from the estate of the late Mrs. Grove-Grady. This award was made as being the best way of using the money to effect the testatrix's purpose. It enabled a larger and more adequate hospital to be built, as no provision would have to be made for staff, that being provided freely by the Royal Veterinary College personnel. In this way the efficiency of the College was increased and its traditions maintained of treating animals belonging to people who, through lack of funds, might have to part with old and valued friends.

The Main College Block, in which the historic opening ceremony was performed in 1937, cost approximately £293,000.

Whilst the splendid building, of which we are so proud has grown, much other work has been done to give effect to the report of the Committee which commenced the new lease of life and usefulness of the College. A new Charter of Incorporation, based upon the recommendations of the Committee, was drafted and finally adopted by the Governors of the College in March, 1936. It was granted on November 16th, 1936, by His Majesty King Edward VIII, under the College's new title of "The Royal Veterinary College and Hospital."

The Royal Veterinary College, like many other teaching institutions in London, decided in 1938, that in the event of war the teaching departments of the College should be moved to the country. As events have shown, this was a wise precaution, for although serious structural damage has not been sustained by the handsome buildings at Camden Town, the conditions which prevailed during 1940-41 would have disorganised the teaching work of the College to such an extent that it is doubtful if the training of students could have been carried on. To transport a technical college, such as the Royal Veterinary College, with all its equipment, to find accommodation for upwards of 300 students and staff, and to organise, within a period of eight weeks, the whole of the teaching arrangements necessary for a course of study extending over five years, was a tremendous undertaking. Premises had to be obtained and extensive alterations effected in order to render them suitable for the many different purposes for which they were required. Unfortunately, it was not possible to secure buildings which were sufficiently extensive to accommodate all the departments of the College at one site or even close together. It was found possible, owing to the generous co-operation of the authorities of Reading University, to provide facilities for the teaching of the subjects of the first and second years within the University. A fine old mansion situated in extensive parklands at Sonning, three miles south of Reading, was adapted to provide for teaching the subjects of the third year (Anatomy, Animal Husbandry and Pharmacology), and the house was equipped as a hostel for fifty students. An extensive range of stabling became a very satisfactory dissecting-room and loose boxes and coachhouses provide housing for the animals of the husbandry department.

Again through the kind co-operation of the Agricultural Department of the University, students of the College enjoy the excellent teaching facilities at the University farm, which is close to Holme Park. The headquarters of the College itself are situated at Streatley, a well-known beauty spot of the Thames Valley. Here provision has been made for the efficient carrying out of the work of the fourth and fifth years with all that it entails. Streatley House, which may be described as the centre of the veterinary colony, houses the administrative offices of the Principal, and, together with its annexes, provides hostel accommodation for fifty students. Within a short distance of the main building is a second house which has been converted into laboratories and classrooms for the Research Institute and Department of Animal Pathology, and a picturesque old house close to the main building has been converted into laboratories for the department of Preventive Medicine. Close to the beautiful old church of Streatley, is the Home Farm, which accommodates the College animals. Half a mile distant is the hospital, a self-contained unit of modern construction consisting of loose boxes, stalls, pharmacy and a well-equipped operating-room, arranged round a central yard.

To complete the arrangements for teaching the clinical subjects of the curriculum, the College has acquired a small country veterinary practice a few miles from the College headquarters. Here students in small groups are able to study at first hand outbreaks of disease among farm animals and the most up-to-date methods for their prevention, diagnosis and control. Individual cases of sickness and accident are sent in to the hospital at Streatley for treatment. It is interesting to note that in spite of war-time difficulties the College has done much more than merely carry on. In anticipation of a greatly extended need for the adoption of preventive measures against diseases of farm animals during the post-war period, the College has taken vigorous steps to broaden the training of its students along these lines. A rural environment

with ready access to an abundance of clinical material is proving invaluable for this purpose.

Research into a number of important diseases of farm stock is being actively pursued. Amongst some of the more urgent problems are the diagnosis and control of tuberculosis, mastitis, contagious abortion and Johne's disease and sterility in cattle, pneumonia in sheep and rickets in pigs.

Time is found for recreation and full advantage has been taken by the students of their rural environment and close proximity to the river to indulge in most forms of sport.

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(b) The Royal (Dick) Veterinary College, Edinburgh

Following the precepts of its founder, the Royal (Dick) Veterinary College has striven from its inception to maintain high standards of professional training, based on careful clinical observation and scientific study. William Dick himself published in current literature much valuable clinical material and comment on professional matters, some of which has been published in book form in his "Occasional Papers on Veterinary Subjects" and "Collected Veterinary Papers." He also produced a "Manual of Veterinary Science," and throughout his long life, played an important part in the gradual raising of the standard of veterinary education which took place during the 19th century. He took an active part in the scientific and philosophical discussions which were a prominent feature of the academic life of Edinburgh in his day, and it is clear that he imbued his students with something of his keen spirit of scientific enquiry, for a number of famous veterinary schools in English-speaking countries were established by certain of his graduates, while others, such as William Hallen and Stockman, who displayed high administrative capacity, were also esteemed as men of science and erudition. Hallen, in particular, maintained a high scientific standard in his reports and in the instructions which he issued to his subordinates for the control of disease in India, and it is to be deplored that the breadth of vision and high conception of the role of the veterinary profession by which he was inspired, in organising the veterinary services of that country, have not since been more in evidence in this country.

In critical observation, investigation, and research and in the production of text-books for the instruction of students, the "Dick" College has also played an honourable part. Names which may be mentioned in this connection are William Williams, Thomas Walley, Finlay Dunn, John M'Fadyean, O. Charnock Bradley, R. G. Linton, W. Miller, E. D. S. Robertson, and G. F. Boddie, all of whom have contributed to the advancement of veterinary education by the production of standard text-books. Valuable work of editing important veterinary works has also been carried out by Dr. Russell Greig and Professor Grahame.

In the field of research, Dr. Bradley made the Edinburgh School famous by his studies in comparative anatomy and this work has since been carried on by Professor Grahame in collaboration with the teaching staff and research students of the Anatomy Department.

In the Pathology Department valuable data showing the incidence of disease has been made available, based on records extending over a long series of years, and valuable observations have been made and published by Professor Matheson and his staff, particularly on the diseases of poultry. More recently extensive research on tuberculosis of the bovine and on bovine mastitis has been undertaken by McFarlane and Stamp, of the Pathology Department, in collaboration with workers at a number of other institutions in the South and West of Scotland, with a view to carrying out a systematic investigation of the pathology of these highly important diseases of livestock.

In the Clinical Department, Professor Mitchell has, for a number of years, made extensive observations on the so-called crippling diseases of equines and in collaboration with colleagues from other sections of the College staff, has in recent years directed extensive controlled investigation and research on this difficult subject. In physiology, the "Dick" College is notable in particular for the fundamental work carried out by Dr. Dryerre, of the Physiology Department who, by demonstrating the importance of calcium deficiency in the causation of milk fever, has revolutionised the treatment of that disease and placed it on a scientific footing, the world over. In veterinary hygiene, Professor Linton, by emphasising the importance of scientific control in the nutrition and housing of livestock, has done much to focus attention on the importance of animal husbandry.

When William Dick started the Edinburgh Veterinary School more than 100 years ago he was the only teacher; to-day there are 32 teachers on the staff, together with upwards of 30 laboratory assistants of various grades. Dick's first class consisted of four members; to-day there are upwards of 200 students in attendance, and the number of annual entrants has to be restricted. Dick had the occasional use of one room and access to his father's forge; the College to-day contains upwards of 200 rooms including a section for the teaching of shoeing.

In the beginning Dick lectured twice a week in the evenings; to-day the whole week is required to provide the necessary teaching hours, and the period of study has been extended from some two months to five years, with an additional year for students wishing to take certain post-graduate diplomas or degrees.

Dick lectured on the structure, function and diseases of the domesticated animals, together with the principles of shoeing: the subjects to-day number upwards of 20, each being in charge of a specialist and his assistants. Not only have subjects been expanded, thus "stable management" has become "animal management," but new subjects have been added to the curriculum, of which epizootology, veterinary jurisprudence, genetics, and diseases of poultry are examples.

The increased time which has been required has been utilised for the necessary development of practical classes in all subjects, *e.g.*, biology, chemistry, physics, etc., and the efficiency of these has been aided by the improved quality of the tools and apparatus which have been provided.

The teaching of anatomy embodies an effort to present a complete picture of the subject by a combination of systematic anatomy, histology, and embryology; whilst the later needs of the students are met by the provision of courses of applied anatomy—as a preparation for surgery, obstetrics and meat inspection.

The teaching of physiology has been expanded from a course consisting of lectures only to one occupying five terms and including adequate practical classes in addition to the lectures. The course in physiology for the B.Sc. (Edin.) is conducted in the College.

Materia medica has developed into pharmacology; and there is ample opportunity for dispensing.

Hygiene and dietetics have been expanded into animal husbandry and the importance of methods of feeding and management in the causation and prevention of disease is emphasised. The practical classes are being further extended, and strong support is forthcoming for the provision of a Field Station to assist in the teaching of the subject.

In 1883 the late Sir John M'Fadyean introduced pathology into the curriculum of the College. To-day the subject occupies the attention of six teachers who specialise in various branches of it, including one whose whole attention is devoted to the subject of poultry diseases.

In addition to the *post-mortem* examinations seen at the College, students in the fourth year pay weekly visits to the abattoir for the practical study of morbid anatomy; while practical classes in pathology and bacteriology are held throughout the session.

Parasitology—in charge of specialists—is taught as a practical subject, the necessity of the student being able to recognise the common parasites being insisted upon as a basis for future work.

Ever since John Gamgee in 1857 began his campaign against the consumption of diseased meat, Edinburgh has been prominent in the matter of meat inspection; one of the first books to be written in English upon the subject was that of the late Principal Walley; for the past thirty years students of the final year have enjoyed the privilege of weekly visits during the session to the municipal abattoir for the practical study of this important subject.

The introduction of aseptic methods into the surgical theatre speaks for itself; while the use of X-rays as an aid to diagnosis has become a routine practice.

Clinical medicine is distinguished by the increasing use which is made of laboratory methods as an aid to diagnosis.

Post-graduate classes in pathology and bacteriology were instituted in 1913 and have been maintained since. Refresher courses in medicine and surgery have been given from time to time.

One of the more striking contributions to the education of the veterinarian in which the Edinburgh School may claim, justly, a predominant part, was the introduction and maintenance of classes for the Diploma in Veterinary State Medicine when that diploma was established by the Royal College of Veterinary Surgeons. Understaffed and ill-equipped as they were for the purpose, the departments of pathology and hygiene made a valiant effort to meet the need—indeed without such support from Edinburgh it is not too much to say that in its early years the introduction of the diploma would have been a failure, so far as the presentation of candidates was concerned.

(c) The Glasgow Veterinary College

(Incorporated)

The history of the Glasgow Veterinary College is, largely, the story of James McCall, its Founder and first Principal for over 50 years. A native of Ayrshire, McCall early forsook a legal career for service with Messrs. Pickfords, railway contractors, whose horse superintendent in London he afterwards became. An innate fondness for horses, however, together with an ardent interest in their medical treatment, led McCall to Dick's Veterinary College in Edinburgh where he graduated at the end of the two years' course of that period.

For two sessions (1857-59) McCall was Professor of Anatomy and Physiology in his *Alma Mater*. In 1859 he opened a practice in the city of St. Mungo and, two years later, began a series of lectures designed to advance zoological knowledge. His first audience consisted of three "amateur" students and the lectures were "delivered by gas-light in a recess of a shoeing-forge." In the next session there was a muster of ten students, half of whom were professional, and McCall lectured for three hours daily on anatomy, physiology and surgery. Chemistry and materia medica were taken at the Andersonian University (to-day, The Anderson College of Medicine).

On June 2nd, 1863, despite stern opposition from the veterinary schools in London and Edinburgh, affiliation of the "New Veterinary College of Glasgow" with the Royal College of Veterinary Surgeons was sanctioned by Royal Warrant from the late Queen Victoria. In the same year Principal McCall acquired new premises consisting of a forge, hospital, dissecting-room and "other convenient departments" and, first among British veterinary colleges to do so, Glasgow demanded of its entrants a certificate of preliminary educational fitness.

During the period, 1861-65, the average number of students was 11. In the subsequent quinquenniad that number had risen to 26. By 1873 the Glasgow College "had not only equalled but exceeded Edinburgh in the number of students," and, four years later, the number of students was a record that had been "rarely surpassed in any other College." In 1873 histology and botany were added to the course, and a summer session, of two months' duration, was introduced. About that time Principal McCall desired to open a department of Agriculture in his school, and intimated his intention of placing his own farm (of "460 acres with 100 cows, 300 to 400 sheep and steam machinery") at the disposal of the new venture. This was fully fifteen years before classes in agriculture first began in the West of Scotland and nearly thirty years before there was an abortive attempt, in 1901, to unite the Glasgow Veterinary College and the West of Scotland College of Agriculture.

One hundred and forty-three students, in 1894, was the highest enrolment experienced save within very recent years. Thereafter numbers began to decline especially when the four years' course and a higher standard of entrance examination were introduced by the Royal College of Veterinary Surgeons in 1896. Later still the opening of the Dublin College was said to have deprived the Glasgow school of, at least, one-third of its annual entrants. Nor did the first decade of this century witness any improvement in registrations, whilst, perforce, the responsibilities of teaching did not diminish in proportion. Conscious of all this and his advancing years, Principal McCall saw that the only real hope for the survival of his college lay in its incorporation as a public body and its recognition as a Central Institution. All this was realised in 1909 when a Board of Governors acquired, with the aid of a governmental grant, the existing college buildings. Principal McCall continued in office.

Towards the end of the Great War of 1914-18 admissions to the College had shrunk to the level of those of the second session in 1862. Principal McCall had died in November, 1915, at the ripe age of 81 years, and was succeeded in 1917 by Sidney H. Gaiger. As well as Principal of the College, Gaiger was Professor of Pathology and, with the full backing of the Governors, he embarked upon an ambitious programme of research, mainly into diseases of sheep. For this work a Central Laboratory had to be created, consisting of a research laboratory, histology room, stables, house for small experimental animals and accommodation for sheep, the bulk of the expenditure being met by grants from the Board (now Department) of Agriculture for Scotland. At that time the only veterinary research work in Scotland was in progress at the Glasgow Veterinary College, and the Edinburgh College was said to have had neither the investigators nor the equipment nor the experimental animals for the purpose.

In 1922, direction of veterinary research work in Scotland was undertaken by the Animal Diseases Research Association, of which body Gaiger was appointed Joint-Director, and Dr. A. W. Whitehouse became Principal of the College and Professor of Anatomy. A spectacular recovery in enrolments had occurred whereby the nine students of 1917-18 had become 95 in 1922-23. In 1920 the Governors had prepared plans for new buildings, estimated to cost about £30,000. But in 1922 there came a hint of an unfriendly official attitude to the College, although it was not until two years later that a Departmental Committee, under Lord Constable, formally declared that "the maintenance of two Veterinary Colleges in Scotland is from a purely educational point of view unnecessary, and, in view of the relative circumstances of the two existing colleges, the grant of State assistance should be discontinued." Suspended that assistance was early in 1925, just fifteen years after it first began! Yet the College did not expire, and—strange commentary on the pronouncement of 1925!—some thirteen years later there were over 300 students in training. Until very recently, Glasgow was the only Scottish centre to accept women veterinary students. Only those whose responsibility it was can properly appreciate the efforts required to meet such demands on the College. *Tantae molis erat Romanam condere gentem!*

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(d) The Veterinary College of Ireland

The Veterinary College of Ireland was founded in Dublin in 1900.

The foundation of the present Dublin College, however, was not the first attempt to establish a Veterinary College in this city. About the year 1798 the Royal Dublin Society was empowered by Act of Parliament to acquire a site for a veterinary school, and the houses numbered 9 to 14 in Townsend Street were obtained for that purpose. Acting on the recommendation of Dr. Coleman, of the London Veterinary College, Mr. Thomas Peall was appointed in November, 1800, Professor and Lecturer, and Mr. Watts, assistant Professor and Practitioner. In 1807, however, Mr. Peall resigned his position on being appointed Veterinary Surgeon to the Royal Artillery and the existence of this veterinary school then ceased. After that time various other attempts were made by the Royal Dublin Society to put on foot a scheme for the foundation of a Veterinary College, and various courses of veterinary lectures were given from time to time at various places, but the establishment of an Association of Veterinary Surgeons, about the year 1868, which held its meetings in the offices of the Royal Dublin Society, would appear to have had a stimulating effect in promoting the scheme. In 1883 the Royal Dublin Society appointed a committee to report on the most effective means of founding an Irish Veterinary School and this eventually led to the establishment of the present Dublin College. This College was granted a Charter in 1895 and a Board of Governors was then nominated by the Crown, the Royal Dublin Society and the Commissioners of National Education. In 1899 the Department of Agriculture and Technical Instruction (Ireland) Act became law and a clause in that Act provided the sum of not less than £15,000 for the building and equipment of a Veterinary College. The Agricultural Board was empowered under the same Act to make further grants to the Veterinary College as it thought fit.

In 1900 the Board of Governors acquired the present site with a frontage on Pembroke Road and a rear on Shelbourne Road. The site had already upon it a house fronting Pembroke Road, and this is the present old house (soon to be demolished) which was formerly the residence of the first Principal (Professor Mettam). Temporary buildings were at first erected on this site, and the first session was opened in October, 1900. In 1901 the permanent building was commenced. In 1902 Blocks A, B and C were completed, and on October 1st of that year this part of the College was officially opened by the Earl of Dudley, then Lord Lieutenant of Ireland. It was then hoped that the site at present occupied by Messrs. Crampton (contractors) would be acquired to enable the frontage of the College to reach Pembroke Road, but it was afterwards found that this ambition could not be realised and the Governors then decided to erect Block D. The entrance to the College was afterwards confined to the Shelbourne Road gateway which was originally intended to be the rear entrance to the building. In 1908 Block D was erected and the Pathological Laboratory was completed. It is this Block which contains the large lecture theatre which is capable of accommodating 300 persons.

In January, 1909, the completed buildings were officially opened by the Right Honourable A. Birrell, then Chief Secretary for Ireland. Block A (except the Lecture Theatre above the Pharmacy) and Block B (except the Pathology Laboratory) were as yet only one storey buildings, but in 1940-1941 these were raised to their present height of two storeys for the accommodation of the small-animal clinic, the Pharmacology Laboratory and the Hygiene Laboratory. At the same time the Physiology Laboratory was extended above the Anatomy Store-room and slaughter room. Recently a strip of land has been acquired from the adjacent Botanic Gardens of Trinity College on which it is hoped to extend the Large Animal Clinical Department and to continue the Pathology Department to Pembroke Road to form the front building of the College at the site of the former Principal's house.

Up to the end of 1914 the affairs of the College were administered by a Board of Governors, the Chairman of which was the late Sir Christopher Nixon, a well-known Dublin physician, who resided

in Merrion Square, and father of the present Sir Christopher Nixon of this city. The finances of the College were then largely dependent upon students' fees and grants from the Department of Agriculture. Its financial position was then, to say the least, precarious and was such that it was becoming increasingly difficult to maintain the College in that state of efficiency which was necessary to keep abreast of the progress of Veterinary Science. Financial relief, however, came in January, 1915, when the College, including the staff, was taken over by the Department of Agriculture, and since then it has remained under the control of that body.

The first principal of this College was the late Professor A. E. Mettam, who, previous to his appointment here, was Professor of Anatomy in the "Dick" College, Edinburgh. It was he who shouldered most of the up-hill work in the foundation of this institution. When he arrived the only buildings on the site of the present College were a few temporary structures and the Old House which became his residence. He travelled to many of the modern veterinary colleges on the Continent, and as a result of the information thus gleaned he planned the Dublin College on such modern principles that it was for many years in the forefront of the modern veterinary colleges in Europe. He was a man of outstanding personality and ability, and in spite of the financial difficulties with which he had to contend in the running of the College he maintained its status and teaching capacity second to none, and many of the Dublin graduates of his time hold some of the most important veterinary appointments in many parts of the world to-day. In November, 1917, he died of pernicious anaemia after a few months' illness. His successor as Principal was the late Professor J. F. Craig, who was then Professor of Medicine, and had been a member of the staff from 1903. In 1935 Professor Craig was appointed to the Prescott Chair of Pathology in the Veterinary Department of the University of Liverpool, and he was succeeded as Principal by Professor J. J. O'Connor, who was then Professor of Surgery, and had been a member of the staff from 1902. Professor O'Connor retired on the age limit in 1941, and was succeeded by the present Principal.

On the retirement of Professor Craig the Chair of Medicine was filled by Professor A. F. O'Dea, and on the retirement of Professor O'Connor, the Chair of Surgery was filled by Professor M. J. Byrne.

For many years, up to 1937, there were only four whole-time members on the professional staff. There were no permanent lecturers or assistants, and several of the subjects were taught by part-time teachers. For a few years after the foundation of the College a resident House Surgeon was appointed annually, usually from the recent graduates of the College. His residence was the rooms next to the Caretaker's Lodge, which have recently been converted into the Principal's room. Mr. Louis Magee, Dunboyne, was one of the occupants of this office. At that period the four whole-time members of the staff were the Professors of Pathology, Surgery, Medicine and Anatomy, namely, Professors Mettam, O'Connor, Wooldridge and Craig respectively. In 1907 Professor Wooldridge was appointed Professor of Medicine in the London College, and from that year until 1915 Professor Craig held the dual post of Professor of Medicine and Anatomy, the duties of which he carried out with the aid of an assistant, who was also Demonstrator in Pathology. This assistantship was an annual appointment, and was offered as an award or prize to the new graduate of the preceding session who held the best College record. In 1914 the assistant of that year was promoted to Lecturer in Anatomy, and in 1915, immediately after the College had been taken over by the Department, he was appointed to the Chair of Anatomy, and the system of the annual appointment of an assistant then ceased. On the death of Professor Mettam in 1917, Professor Daniel Kehoe, a distinguished graduate of the College, returned from South Africa to take over the Professorship of Pathology, but in 1928 Professor Kehoe died after a protracted illness, and he was succeeded by Professor W. Kearney, who had returned from Africa a short time previously. The subjects of the curriculum not already mentioned were taught by part-time members of the staff, the longest in office being Professor G. T. Dunne, who taught materia medica and hygiene from soon after the foundation of the College until 1937 when teaching by part-time members of the staff ceased and when the staff was reorganised and increased to its present size of five professors and nine lecturers. In that year a whole-time Professor of Physiology, Professor J. A. Nicholson, was appointed, and this was the first occasion on which the teaching of physiology in this institution was placed in the hands of a veterinarian. From 1915 to the present date chemistry and biology have been taught in the College of Science, which is now a constituent part of University College, but previous to that year these subjects were taught by part-time members of the staff of the Veterinary College.

The Dublin College is unique in that it is a State Institution and, therefore, the only one of the five affiliated Veterinary Colleges in which the staff are Civil Servants.

The Dublin College is the only institution in Ireland which prepares students for a Diploma in Veterinary Science. It is affiliated to the Royal College of Veterinary Surgeons and prepares its students for examination by that body, which grants the Diploma (M.R.C.V.S.) to successful candidates. There is no other Diploma or Licence granted in Ireland or Great Britain which will legally entitle the holders to practise Veterinary Medicine and Surgery in either of these two countries.

On the establishment of the Irish Government in 1922 the Royal College of Veterinary Surgeons no longer exercised any jurisdiction over the veterinary profession in the 26-county portion of Ireland. This state of affairs continued until the passing by the Irish Government of the Irish Veterinary Surgeons Act in 1931, although the Royal College never ceased to recognise the Dublin College as an affiliated institution and continued to examine the Dublin students as before. Consequent upon the passing of the Irish Act an Irish Veterinary Council, and with it an Irish Register of Veterinary Surgeons was established, and thus for the first time the veterinary profession in Eire came under the jurisdiction of an Irish body. This Act, however, restored to the Royal College its control of the examination system in the Dublin College, so that the graduates of the Dublin College have exactly the same qualifications as the graduates of the colleges in Great Britain, and whether our export cattle be examined at the Dublin port or at Birkenhead the examination is carried out by men who are graduates of the same Corporate Body and, therefore, of exactly the same professional standing. Furthermore, in virtue of this arrangement there is reciprocity between the British and Irish Registers of Veterinary Surgeons whereby a Dublin graduate can, if he so desires, place himself on both Registers.

The Irish Veterinary Council consists of eight members and is elected by the members of the veterinary profession in Eire; half of its members are *ipso facto* members of the Council of the Royal College of Veterinary Surgeons. It exercises jurisdiction over the members of the profession in Eire in exactly the same manner as that hitherto exercised by the Royal College except that it does not control directly the examination system in the Dublin College. In virtue, however, of its representation on the Council of the Royal College it thus conjointly with the Royal College exercises controlling influence over the examination system in this country, and a representative of the Irish Council always acts as a supervising delegate at the examinations in the Dublin College. This delegate may, should he think fit, criticise the methods of examination and place his views, together with the views of the Irish Council, before the Council of the Royal College.

The External Examiners are appointed by the Royal College from both Ireland and Great Britain, and despite the fact that very few Irishmen apply for examinerships, there are usually a few Irish members on the Examining Board who, of course, examine not only in the Dublin College, but travel with the other external examiners to examine in all the other affiliated colleges in Great Britain.

The head teacher in each subject acts as an Internal (third) Examiner, in conjunction with the two External Examiners, in his own subject and in his own college, and he has exactly the same powers in the entire examination (both written and oral) as each of the two external examiners, except that he does not participate in setting the questions for the written paper—the reason for this exception being that it would be impracticable for the teachers in all the affiliated colleges to participate in setting the same papers.

It is in virtue of this arrangement with the Royal College of Veterinary Surgeons that so many newly qualified graduates of the Dublin College are enabled to acquire valuable experience in Great Britain before returning to this country to practise. This experience is not available to the same extent in Eire where veterinary practices are comparatively small and where very few veterinary surgeons employ assistants.

It may be pointed out that the Royal College exercises no control whatever over the management of the Dublin College, nor does it exercise any jurisdiction over the Irish Register of Veterinary Surgeons or over the members of the Veterinary Profession in Eire. This control is entirely in the hands of the Irish Veterinary Council. Should the Royal College wish to express any disapproval regarding the teaching capacity of the Dublin College it can do so only by virtue of its power to reject the students presented at the examinations as not being up to the required standard.

Should the Dublin College cease to remain affiliated to the Royal College of Veterinary Surgeons and an Irish Degree or Diploma be substituted, there would be no hope of the Irish graduates gaining admission to the British Register without undergoing, at least, one

additional special examination, because this is the maximum concession which the Royal College has ever granted to the holder of a foreign veterinary Degree or Diploma, when seeking admission to the British Register. Such a state of affairs would obviously be interpreted as an implication that the Irish qualification was on a lower standard than that of the Royal College, whether this was the case or not. It may be stated that numbers of foreign veterinary surgeons, chiefly from Europe and America, have sought this concession and taken this special examination, after one year's attendance at one of the British Colleges, in order to obtain the Diploma of the Royal College of Veterinary Surgeons (M.R.C.V.S.) which is generally recognised throughout the world as being the Veterinary Diploma which carries the highest standing.

Each member of the profession whose name appears on the Irish Register must pay an annual fee of two guineas to the Irish Veterinary Council, one guinea of which is handed over by that Council to the Royal College of Veterinary Surgeons in recognition of the fact that the member is also registered on the Royal College Register.

The Department of Agriculture (Eire), which is the Controlling Body of the Dublin College, has, within recent years, given very considerable assistance and encouragement to veterinary education in Eire. Just before this war it had undertaken commitments to the extent of almost £100,000 in reconstructing, extending and equipping the Dublin College. A part of this work has already been carried out, but the remainder had to be postponed until the end of the war owing to lack of the necessary material.

The present staff consists of five Professors (one of whom is also Principal), eight Lecturers, one Poultry Pathologist, two Bacteriologists (for the examination of canned meat). All are qualified veterinary surgeons and are whole-time, there being no part-time teachers. The subjects of the first year, however, are taught at University College, Dublin, by members of the staff of that institution.

The numbers of students at this College had been gradually increasing within recent years until in 1942 they had gone beyond the 300 mark. Since that year it has been found necessary to restrict the entry to 30 per annum. The numbers at present stand at 250, including six ladies. The entry quota is full for the session commencing October, 1944, and is almost full for the succeeding session.

The students are drawn from all parts of Ireland; a few are from Britain, and until recently a few were of Indian origin. The numbers who have graduated from his College since its inception in 1900 up to the end of 1943 total 743. Of these about 60 per cent. remained in Ireland and the rest emigrated to Great Britain and to all parts of the British Commonwealth and Empire.

There is as yet no affiliation between this College and a university whereby a student can take a university-degree course concurrently with the veterinary curriculum, but negotiations with the National University of Ireland are at present in progress with a view to having such an arrangement brought into effect. A few of our graduates have recently taken a post-graduate course at Trinity College, Dublin, and obtained the Ph.D. Degree of that University. Numbers of our graduates in this country have, of course, taken the D.V.S.M. Diploma.

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(e) The Liverpool University School of Veterinary Science

The formation of a veterinary school in Liverpool was first discussed in 1898, but nothing materialised until 1904 when the University, supported by the Lord Mayor of the City, and the Chamber of Commerce, invited Professor W. Owen Williams, of the New Veterinary College, Edinburgh, to transfer his school to Liverpool. There already existed in the University an Institute of Comparative Pathology. The prime mover in the matter was Sir Rupert Boyce, Professor of Pathology in the University, and it was largely due to his indefatigable efforts that the school was born. He had the active support of a number of prominent veterinary surgeons in the City and district, chief amongst whom were Henry Sumner, Eaton Jones and Stafford Jackson. Other names which figure prominently in the original development of the school are those of Sir Charles Sherrington, the physiologist; Dr. E. W. Hope, the Medical Officer of the City; and Dr. H. E. Annett, Lecturer in Comparative Pathology. Professor Williams accepted the invitation, and was appointed Professor of Veterinary Medicine in the University. He brought some sixty of his students with him to Liverpool, and classes were commenced on October 3rd, 1904. The teaching of the general medical sciences was undertaken by the appropriate department in the University. A whole-time lecturer in veterinary anatomy was appointed, while clinical instruction and veterinary hygiene were undertaken by veterinary surgeons in the City, who were appointed part-time lecturers in the University. In 1919 a Chair of Veterinary Anatomy was instituted, and Mr. J. T. Share Jones, who had been lecturer in that subject since the inauguration of the school, was appointed to fill it. About this time more commodious buildings were secured for his department, and the anatomical museum was enlarged. Professor Share Jones was a notable figure in the growth of veterinary teaching in Liverpool, for he served in the school from the time of its inception until his retirement in 1938. In 1926 the William Prescott Chair—Care of Animals, Causation and Prevention of Disease—was instituted. It was occupied at first by Professor S. H. Gaiger and later by Professor J. F. Craig. These men developed the department of veterinary pathology and bacteriology. In addition to teaching it provides an extensive laboratory diagnosis service, and to it is attached the Ministry of Agriculture Veterinary Advisory Officer for the counties of Lancashire and Cheshire. In 1928 a veterinary hospital was built adjacent to the University with accommodation for large animals and domestic pets. The latest annual figures show that 1,470 animals were treated in the hospital, of which 385 were in-patients. In 1941 a Chair of Veterinary Surgery was established, and a little later a Field Station in a rural setting on the Wirral Peninsula was opened for instruction in animal husbandry and farm animal medicine and surgery. At the moment the Field Station comprises an animal husbandry unit made up of a small herd of cattle, pigs and poultry, and a hospital for the reception of farm animals. During the year 1942-43, 59 horses and cattle were admitted to the hospital. They had been sent in by veterinary surgeons practising in the counties of Cheshire, Flint, Denbigh and Lancashire. In addition a number of farms in its vicinity are attached to the station for routine teaching. At present fifth year students are in residence at the Field Station Hostel, and vacation courses are held there for students of the first, second and third years.

At present there are three veterinary departments in the University; those of veterinary anatomy; veterinary pathology and bacteriology; and clinical veterinary medicine and surgery and animal husbandry. Eleven veterinary surgeons are employed in a whole-time capacity and one part-time. The William Prescott Chair, which in future is to be one of Veterinary Preventive Medicine, is vacant.

The subjects of physics, chemistry, zoology, botany, physiology, and histology, biochemistry, pharmacology, entomology and parasitology are taught by the professors and staff of the appropriate departments in the University and School of Tropical Medicine.

The school is an integral part of the University and is a branch of the Faculty of Medicine. Veterinary science has become established as a branch of university education by the institution of two endowed Chairs in purely veterinary subjects, which carry with them seats on Senate, together with a number of established veterinary lectureships. Moreover, students take their preliminary science courses in the Faculties of Science and Medicine. The University is guided in matters of veterinary education by the Board of Veterinary Studies, who report through the Faculty of Medicine to Senate and Council.

Since the inauguration of the school, 346 students have obtained the Diploma of the Royal College of Veterinary Surgeons. In addition to giving courses for the qualifying Diploma, the University has since 1914, awarded Degrees in Veterinary Science. The Degree course runs concurrently with that of the Diploma, the Final B.V.Sc. examination being taken one term after the Diploma has been obtained. For the Degree course matriculation is an essential preliminary requirement. The following Degree awards have been made: Bachelor, 113; Master, 8; Doctor 3. A Diploma of Veterinary Hygiene, available to veterinary surgeons, was instituted in 1904, and up to 1927, when courses were discontinued pending revision, 57 awards had been made.

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(f) Cambridge University Veterinary Course

The Council of the Royal College of Veterinary Surgeons has approved the following scheme for the provision of veterinary teaching in the University of Cambridge. The scheme is now under consideration by the General Board of Studies of the University.

A Cambridge student who attains honours, or the standard of honours in Part I of the Natural Sciences Tripos will be granted exemption from the examinations of the R.C.V.S. as follows:—

(1) From the first year examination in Chemistry, Physics, and Biology, if he passes, or obtains exemption from the first M.B. examination;

(2) From the examination in General Physiology and Bio-Chemistry, and the examination in Physiology and Bio-Chemistry II, if he attains a standard not lower than that of the second class in the subject Physiology in Part I of the Natural Sciences Tripos;

(3) From the examination in General Pathology if he attains a standard not lower than that of the second in the half-subject Pathology in Part I of the Natural Sciences Tripos and the same standard in the half-subject Zoology B.

The remaining subjects of the veterinary course will be dealt with as follows:—

Veterinary Anatomy.—Students will be presented for the R.C.V.S. Examination before they are admitted to the Fourth Year's Course at an affiliated College. It is desired that the Council shall permit Cambridge students to present the whole subject at one examination.

Animal Management.—Students will be presented for the R.C.V.S. Examination, but it is desired that the Council should arrange for students to be examined at Cambridge.

Those who do not obtain exemption on their performance in certain subjects of the Natural Sciences Tripos from the corresponding examinations of the R.C.V.S. must present themselves for, and pass, the examinations of the R.C.V.S. in which they failed to obtain exemption before admission to the Fourth Year's Course at an affiliated veterinary college.

Fourth Year.—

Fifth Year.—The courses in the fourth and fifth years will be pursued at an affiliated veterinary college.

"The establishment of the agricultural societies that have so numerously sprung up within the last few years, and more especially that of a national agricultural society, of which there is so fair and immediate a prospect, will or may effect a great change in the connection between the veterinary surgeon and the farmer. In the working out of the views and purposes of these societies, the veterinarian would always be a useful associate, and often his services would be indispensable. Can it be doubted that one of the first and most determined objects of this noble society will be, to obtain for their cattle and sheep, unrivalled in every country in the world, an immunity from some of the diseases by which thousands of the one and millions of the other are now swept away?

"Will they find in the veterinary surgeon an associate capable of accomplishing these important purposes? Has the principal veterinary school been conducted with a view to their accomplishment, or so as to afford the most distant hope that it may be effected? Has—alluding to the beautiful paper of Mr. Mayer, in the present number—has the system of our education been sufficiently carried out to diffuse that extent of *real veterinary knowledge* which is absolutely necessary for the interests and welfare of the science? Most certainly not. He who now practises on the diseases of cattle and sheep as well as the horse, as almost every country veterinarian is compelled to do, has either applied the knowledge he has acquired of the horse to the treatment of other animals; or adopted, with certain improvements, the opinions of his forefathers; or gleaned here and there from the various periodicals and other publications which, fortunately for him, have lately appeared; or gone to other schools, or attended other lectures; or submitted for a while to a course of self-degradation and blundering practice which he is ashamed to think of. Is this the way in which the veterinary surgeon is to accept the proffered alliance of the agriculturist? Or, while this state of things exists, will that alliance be proffered at all?

"What, then, is to be done?—Revert to the original constitution of the Veterinary College, which by some means, useless now to enquire into, has been sadly departed from, but never abrogated—which is still the law, but not at all the practice, of the place. 'The grand object of the institution has been, and is, to form a school of veterinary science, in which the anatomical structure of quadrupeds of all kinds, horses, cattle, sheep, dogs, etc., the diseases to which they are subject, and the remedies proper to be applied, might be taught; in order that by this means enlightened practitioners of liberal education, and whose study has been devoted to the veterinary art in all its branches, may be dispersed over the kingdom, on whose skill and experience confidence may be securely placed." This—*the original constitution of the Royal Veterinary College, and including the associated sciences which must necessarily be taught*—is everything the agriculturist can by possibility want.

"What then is required?—a subversion of the College? No; but that which is occasionally necessary in too many human institutions—a return to its original and legitimate object."—*Veterinarian*, 1838, **11**, 102.

V.—The Public Veterinary Services in Great Britain and Ireland

(a) The Army Veterinary Service

We commence treatment of the public services rendered by the veterinary profession by giving pride of place to the Army Veterinary Service, for a few compelling reasons. In the first place, it is by far the oldest service, dating back to within a few short years of the commencement of veterinary education in this country. In the second place, for long years it was the premier service in so far as it made demands upon the numbers of recruits from the colleges. In the third place, through the prestige which the veterinary personnel acquired within the Army they wrought incalculable good in raising the social standing of the veterinary profession generally. And, in the fourth place, through the rapid development of mechanisation which we have witnessed within the past generation, a prime factor in human evolution is now disappearing which had prevailed since six or seven centuries before the Christian era in the form of the use of the horse as the chief source of mobility and motive power in warfare. It befits us, therefore, to place on record a worthy epilogue to a great chapter of human history. If the late Sir Frederick Smith had done nothing else, his place as a scholar and historian would be secure on the merits alone of the classic which he wrote on the Royal Army Veterinary Corps.

In this short contribution it is proposed to trace the development of the Army Veterinary Service from its inception in 1796 to the present day. Justice cannot be done to the subject in so brief an article and of necessity many important events must be omitted—it is only possible to sketch the merest outline.

In 1796 Edward Coleman, Principal of the London Veterinary College, was entrusted by the Commander-in-Chief with the task of forming a Veterinary Service. Prior to that date care of the sick and lame had rested in the hands of the Army farrier: the Army Veterinary Service, therefore, has been in existence for 148 years, longer indeed than many famous regiments. Coleman was appointed Principal Veterinary Surgeon to the Cavalry and to the Board of Ordnance (Artillery), holding this post until his death, 43 years later, at the age of 73. At the time of his appointment there were 40,000 horses employed by the Cavalry in England. Commissions as Army Veterinary Surgeons were conferred but were confined to Cavalry Regiments; candidates for the Artillery were required to serve on warrant as in the Medical Service, and it was not until nine years later that commissions were granted to both arms.

We have little information concerning the 34 years of Coleman's administration, but we do know that during this period the health of Army horses improved to a considerable degree, mainly due to the lessons he taught in the prevention of disease and to improvements in dietetics and hygiene.

In those days, and indeed for 40 years after Coleman's death, the life of a veterinary officer was entirely upon a regimental basis—rarely did veterinary officers encounter each other unless upon the line of march or when changing stations. Each individual must needs set his own standards, both in his professional and in his private life, with no administrative chief to help with advice or precept, and right well did these forbears of ours discharge their duties, laying a firm foundation upon which those who followed in happier circumstances were enabled to build.

On Coleman's death there was disagreement in influential quarters as to his successor. The choice lay between handing the Department over to the Army Medical Board; making an appointment from the professional staff of the Veterinary College; or a promotion from amongst serving officers. Fortunately the last choice prevailed and Frederick Clifford Cherry was appointed as the new Principal Veterinary Surgeon, holding the post for 15 years. He was succeeded by John Wilkinson, who died in 1876.

During the Cherry-Wilkinson regime several changes occurred. Conditions of service were improved, a uniform pattern of horse shoe adopted, a Record of Treatment of cases was kept and Regulations for the Performance of Veterinary Duties issued. Consequent upon the terrible wastage of animals in the Crimean War, the first attempt to draw up an organisation for the Service was made and administrative officers appointed. True there was no provision for the care of the sick in hospitals—these were still dealt with regimentally—but it was clearly an improvement on sending an army into the field without any veterinary organisation. It was during this period that William Percivall, of the 1st Life Guards, flourished—a name which, coupled with that of Frederick Smith, will remain for ever green so long as our profession lasts, and we are honoured that such men belonged to our ranks.

Wilkinson was succeeded in 1876 by James Collins, a fortunate choice, for Collins had the vision to see what reforms were needed

and the strength to carry them out. From the day of his appointment onwards the Department never looked back and although progress was slow at times, owing to a system which failed to grasp the necessity for a well organised veterinary service, it went steadily forward until at last it reached its apogee in the Great War. With the major events which occurred during this period we can only deal very briefly, but to many far-reaching reforms bitter opposition was encountered from both military and financial quarters, whose ambition it seemed was to stifle the advancement of any scheme which entailed a departure from the old order, however meritorious it may have been. This opposition was only overcome by the courage and devotion of those early stalwarts whose prowess we, in these days, are apt to forget.

In 1880 the Army Veterinary School at Aldershot was formed, largely due to the influence of Major-General Sir Frederick Fitzwygram, Commanding the Cavalry Brigade, himself a veterinary surgeon: this was followed a year later by the abolition of the Regimental System, the control of our officers being vested in the P.V.S., while henceforward the Service was known as the Army Veterinary Department. It was at about this period that veterinary officers were mentioned in Despatches for the first time and became eligible for the award of honours. Compound rank of Veterinary Colonel or Veterinary Major and so forth took the place of the old titles, such as Veterinary Surgeon 1st Class, but it was not until many years later that non-compound rank as it stands to-day was introduced. In 1898, in face of strong opposition from officers commanding cavalry regiments who resented the idea of horses being taken from their control for treatment, the first Station Veterinary Hospital was formed. In the meantime, however, an edition of War Establishments was published without consultation with the Principal Veterinary Officer and in it no provision was made for the care of sick animals in the field. This state of affairs existed at the outbreak of the South African War and consequently there was no provision for Veterinary Hospitals. The Veterinary Service was placed under the Remount Department and, resulting upon this unfortunate policy, the South African War was characterised by its appalling loss of animal life and every Remount Depot was riddled with glanders and mange. Happily the lessons, grim though they were, were learnt at last and in the intervening years between this and the Great War many important changes took place, so that, at the outbreak of hostilities in 1914, the Army was provided with a Veterinary Service capable of expansion and which has now come to be recognised as second to none. The most important of these reforms provided that the Veterinary Service should have complete control of its own affairs and should be entirely responsible for its own efficiency. Compound rank was abolished and the head of the Service was given the rank of Major-General. Provision was made for mobilisation, veterinary stores and the establishment of a Depot for the Corps. An establishment was granted for the Territorial Army and the Director-General was given direct access to the Q.M.G. on matters affecting the Veterinary Service. A Record Office for the Corps was formed and veterinary hospitals were organised on a sound basis. As a result of these and other changes, with which unfortunately there is no space to deal here, the outbreak of the War in 1914 found our Service prepared and ready.

The tale of its expansion and of the great work it accomplished is written for all time in the Official History of the War 1914-18. At one period as many as 1,200 officers were serving, the majority of whom were granted temporary commissions from a Register of Veterinary Surgeons which in 1918 contained the names of 3,350 members. These officers were drawn from all branches of the profession; practice, research, the Civil and Colonial Services and from teaching institutions. In point of relative numbers the military effort offered to the country by the profession, while it may have been equalled, was certainly not surpassed by any other. The total number of warrant officers, N.C.O.s and men on the strength of the A.V.C. at its maximum was 27,950.

In 1915 the first School of Farriery was formed and was soon followed by others. Through these schools thousands of men passed to be converted into trained farriers. In addition to a vast expansion of hospitals and mobile sections (at one period as many as 31 hospitals and 83 mobile sections were operating overseas) new veterinary units were established in the form of evacuating stations and convalescent horse depots, while laboratories were set up in the different theatres of war. The demobilisation of vast numbers of animals from countries where glanders and epizoötic lymphangitis were endemic presented a grave problem which was ably tackled by Major-General Sir Layton Blenkinsop, the Director General, thereby preventing the introduction of disease into this country.

At the end of the war the Corps was honoured by the King, who conferred upon it the coveted title of Royal, which necessitated a change in the Corps badge.

After the War a period of retrenchment ensued and with the onset and steady progress of mechanisation the Corps reached a stage which, upon the outbreak of the present war, was only a mere shadow of its former self. Nevertheless a nucleus of experienced Regular officers still remained, together with a skeleton of Territorials, and it was around this cadre that the present expansion has been built, an expansion which even the most optimistic would have deemed unlikely at the outbreak of hostilities. Once again, owing mainly to the extensive use of animal transport in Europe and the Far East, the Corps is playing an indispensable part in operations and upon an ever increasing scale. It is now over three years since the duties of the Remount Service were taken over by the R.A.V.C.; this evidence of the growing confidence in which the Corps is held was the cause of just gratification both to its members and to the profession at large, so that, not only are we responsible for the care of the sick and injured, but charged with the supply and training of reinforcements. Other additional duties consist in the running of livestock depots in certain theatres for cattle, sheep and pigs and in carrying out inspection of meat. In this war, even to a greater extent than in the last, the advice of R.A.V.C. officers is freely sought by higher authority upon all matters where animals are concerned and invariably their advice is adopted. In these days of mechanisation there are few persons outside the Corps possessing a sound knowledge of animals and their requirements from a military point of view, so it is fitting that the want should be supplied by those best qualified to give it.

Although the R.A.V.C. can never again, through the nature of events, approach in point of numbers its effort of the Great War, it has nevertheless made a most important contribution to final victory. The veterinary profession is justifiably proud of its efforts, civil and military, in the present struggle and feels that the Royal Army Veterinary Corps has again demonstrated the value of organised scientific endeavour.

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(b) The Animal Health Division of the Ministry of Agriculture: its Development and its Present Functions

The control and eradication of contagious diseases in animals is of vital importance to the livestock industries throughout the world and practically every country has adopted methods for these purposes. In many cases the measures are particularly applied in the first place for the control of international trade in livestock and the dissemination of disease consequent upon such trade.

The insular position of this country affords unique facilities for the ready prevention of introduction of many diseases; but there was no organised system of control, although serious losses from epidemics had been recorded in this country, until 1848, when owing to the prevalence of sheep pox, which had been imported from the European continent, two Acts of Parliament were passed, under which sheep pox and the cattle plague outbreaks of 1865 were dealt with. The powers conferred by these Acts proved ineffective and in 1866 the Cattle Diseases Prevention Act was enacted. This prescribed for the compulsory slaughter with compensation of all affected animals and gave power for the slaughter of contact animals. Cattle plague was eradicated in 1867 and from experience gained a Contagious Diseases (Animals) Act, 1869, was passed. This conferred extensive powers upon the Privy Council and local authorities to deal with animal diseases, including pleuro-pneumonia and foot-and-mouth disease, in addition to sheep pox and cattle plague.

This Act also prescribed restrictions in the importation of animals from certain foreign countries in which diseases were prevalent. Incidentally, it is of great interest to note that John Gamgee had advised some years earlier the prohibition of the importation of livestock from Europe. Until this period the control of the importation of animals was vested in the Privy Council who issued orders and the administration was vested in the Commissioners of Customs who employed veterinary surgeons to examine the animals on landing.

In those days there was practically no methodical action taken to deal with diseases of livestock, but owing to a disastrous spread of cattle plague throughout the country in 1865, a "Veterinary Department" was formed, comprising a small staff of veterinary surgeons, to advise on professional questions, together with a clerical staff for correspondence and statistical work. The Department was controlled by the Clerk of the Privy Council. No administrative work was carried out by the Department, which was left to local authorities and their officials and to the local police force.

A few years later, after cattle plague had been practically eradicated, the staff of the Department was reduced and was mainly of an advisory description, the administrative duties remaining with local authorities. The importation of foreign stock, however, was directly controlled by the Department who appointed veterinary

surgeons to examine the animals at the ports of landing. The Department was under the charge of a Secretary who—subject to the general control of the Clerk of the Privy Council—was responsible for administration and the direction of the veterinary and non-professional staff. The number of veterinary surgeons employed at the various ports was 26.

There was no very marked alteration in the service until 1897, when the nucleus was formed of the modern Government Veterinary Service. In that year three temporary non-established Veterinary Inspectors were appointed to the Board of Agriculture in connection with the final successful efforts for the eradication of pleuro-pneumonia, which still existed in the London cowsheds after the disease had been eradicated from the rest of the country. When that task was concluded the services of these inspectors were retained and they were then employed in carrying out enquiries into swine fever, which at that time was prevalent and widespread. The services of these officers having proved eminently satisfactory, six more veterinary surgeons were added to the staff in 1899 and the staff was further augmented from time to time until in 1937 it comprised also a deputy and 104 inspectors supplemented by a panel of local veterinary inspectors engaged in private practice.

The veterinary staff from 1897 to 1937 were engaged in dealing directly with foot-and-mouth disease and swine fever, the examination of imported animals at approved landing places, the laboratory diagnosis of scheduled diseases at the veterinary laboratory and generally with supervision of the enforcement by local authorities and the police of the various preventive measures against disease. These measures included the cleansing and disinfection of livestock markets, saleyards and lairs, of railway loading docks and pens, and also of road vehicles, the boiling of animal foodstuffs, the disposal of packing materials used for imported and other goods, the keeping of records of movement of animals, the isolation of imported animals including dogs and cats in quarantine, the inspection of fittings of vessels and periodical inspection of the cleansing and disinfection of the vessels, together with the undertaking of voyages of inspection from time to time on cattle-carrying vessels. In addition, there was the examination of horses prior to shipment to the continent from authorised ports and ensuring the requirements of fitness to travel and work without suffering.

The establishment of a Quarantine Station in London in 1928 added considerably to the duties of the Department, as all animals entering the station have before entry to be examined with other animals at the place of origin in Great Britain.

The year 1909 was a notable landmark in the history of the Government Veterinary Service as laboratory services were instituted for the routine work in connection with the diagnosis of diseases dealt with under the orders of the Board, and the investigation of various epizoötiological questions which arise therefrom; also the investigation of other diseases of stock brought to the notice of the Board. Another service provided was the immunisation of cattle against redwater and anaplasmosis before export to tropical and sub-tropical countries. The laboratory was situated at Alperton (within about eight miles of London) in a converted old manor house which had previously been used in connection with the experimental investigation carried out by the Departmental Committee on Bovine Epizoötic Abortion. It is to the credit of Sir Stewart Stockman and the three veterinary inspectors who assisted him that such a volume of valuable work was carried out under the many disadvantages arising from the primitive surroundings.

The year 1938 saw the establishment of the centralised State Division of the Ministry of Agriculture and Fisheries and the veterinary services of local authorities, together with a reorientation of the Government's policy in regard to diseases of animals. Formerly the activities had been chiefly confined to epidemic diseases and the record of achievement is shown in that no outbreaks of sheep pox have occurred since 1850, of cattle plague since 1877, pleuro-pneumonia since 1898, epizoötic lymphangitis since 1906, rabies since 1922 and glanders since 1928.

Now it is proposed to adopt large-scale campaigns for the eradication and prevention of various diseases which cause so much loss to the stock-owning community. The proposed campaigns are initially to be mainly directed to bovine tuberculosis and the elimination of contagious abortion in tubercle-free herds, with the routine clinical inspection of all dairy herds, and to poultry diseases.

The staff now comprises some 350 whole-time veterinary officers and approximately twice that number of veterinary surgeons employed in a part-time capacity.

The livestock industry, so vital to the economic life of the nation, owes much to the efficient service which has always been rendered by veterinary surgeons, both whole- and part-time, in Government service, and to the enthusiasm of the heads of the service, among whom it is not invidious to name especially Sir George Brown and Sir Stewart Stockman.

(c) The Municipal Veterinary Services

At an early stage, the services of whole-time veterinary surgeons were demanded in the main by the more enlightened and populous municipalities for attendance upon their municipal horse transport. With the advent of mechanisation this form of service greatly diminished and in its place the importance of meat and milk inspection became more widely recognised. To denote the growth of these local services from their origin we are happy to reproduce below the reminiscences of a municipal veterinary servant who was one of the pioneers in this class of employment.

(I) SOME EARLY FUNCTIONS

The Veterinary Department in Liverpool was established in 1866 and at that date, I believe, was the only one so styled in England. The head of the Department was of course a veterinary surgeon with a very large staff of some thousands of workers to control. The main duties consisted of: The purchase, maintenance, management of horses (a large stud) and the scavenging and cleansing of the city streets, ash pits, privys, etc. This may not seem relevant, but before the general adoption of refuse destructors very large quantities of the refuse were loaded into canal barges or railway wagons and despatched to farmers who were eager purchasers.

The carcases of all animals were examined daily at the knacker's yard and by this means glanders was entirely stamped out and rabies almost eliminated. As horse transport in those days was supreme and mange very rife, all studs were examined as often as possible. Sunday was usually chosen for the bulk of inspection as the majority of animals were then in the stable: the work was onerous.

To assist in the pathological side of the work Professor Boyce, who was in the service of the University, was asked to co-operate, and during our consultations I suggested that it might be possible to establish a veterinary school in the University. He was very enthusiastic, with the result that Professor Williams, of the Veterinary College in Edinburgh, was transferred here. The students were given practical instruction in the corporation stables and farms and in the establishments of practising veterinary surgeons.

The municipal authorities were also concerned in respect of the prevalence of bovine tuberculosis and the evil effect of their milk. I advised that the great danger was tuberculous mastitis. It was then decided that a quarterly inspection of the cattle in the city (then about 8,000) should be instituted and more veterinary surgeons were engaged. Powers were afterwards sought and obtained for us to visit any farms outside (adjoining counties, Wales, etc.) from which milk was supplied. These duties caused a fourfold increase of veterinarians on the staff.

These visits were almost directly responsible for a vast improvement in the condition of cowsheds, stables, piggeries, etc. Many were wholly without light or ventilation and it was no uncommon occurrence to have to stoop when entering as the ceiling was not high enough for one to stand upright. Overhead was the loft packed with hay and straw. Immediately outside was the middenstead into which ran the drainage from inside, which was frequently used by the animals, upon being liberated, as liquid for drinking.

Eventually the farmers realised many of these evils and a deputation approached the corporation. As a result, a visit to the Continent was arranged. I was in charge and conducted about 50 farmers, including also bacon curers and others, over premises mainly in Holland and Denmark, and a few in Germany and Sweden. Much information was obtained and great good resulted.

With regard to horse transport, this is a speciality unto itself and in my opinion has been badly neglected. Not nearly enough has been realised of the power and capability of the horse. Expert knowledge is required in the way of type, quality, diet, shoeing, the class of vehicle and equipment, indeed, everything connected with the transport animal. If due consideration is given to these matters there are very few mechanical methods that can compete. On short journeys, with frequent stopping and starting, manoeuvring into position at warehouses, docks, etc., there is no form of transport to equal it. The small wagons and carts used by various authorities are quite unfit and should be replaced by adequate vehicles. To illustrate; about 1925 America claimed that their home-bred horses were superior in pulling power to England's and that two of theirs as a team had pulled the equal of 16½ tons on a dynamometer. Liverpool was consulted and eventually horses were sent to the Agricultural Hall, Islington, on the occasion of a Shire Show, and a team (two) moved with ease 18¾ tons on a wagon weighing 2 tons 12 cwt.—over 21 tons in all. The cheapest of all classes of horse transport is that by canal, where one horse can easily pull over 100 tons at a pace of from 1½ to two miles an hour.

It will be realised that for the duties outlined above an extensive knowledge of animal husbandry is needed and it would be greatly to the advantage of a veterinary surgeon intending to pursue such

a career to spend a year or so on a good farm and take part in all the practical work. Very much reliance is frequently placed on theory and later found to be entirely misplaced. The acid test is practice.

A brief summary of each disease under the Diseases of Animals Act would be very beneficial to veterinary surgeons as frequently one has to take them to the law department—on occasions to a barrister—to get a rightful interpretation: in many instances a few lines would suffice. Urban and rural authorities would reap great benefit from the acquirement of a veterinary department, with the services of a veterinary surgeon, either whole- or part-time.

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(II) MEAT INSPECTION IN ENGLAND AND WALES AND IN SCOTLAND

The growth of what augured well to become, as it has indeed become in some other countries, one of the most fruitful fields for veterinary employment has undergone somewhat different courses in England and in Scotland, principally due to differences in legislation, and so they are treated separately in the following contributions:—

Meat Inspection in England

Veterinary meat inspection in this country may be regarded as having commenced with the appointment of a Veterinary Meat Inspector by the Manchester Corporation in 1893. It is believed that this appointment was principally the result of the efforts made by a prominent member of our profession in practice in Manchester (Mr. S. Locke). The Meat Inspection Service then founded in Manchester extended and is still flourishing, employing four veterinary surgeons. In 1899 the City of London Markets Committee decided to appoint a Veterinary Inspector at the Metropolitan Cattle Market, Islington, and the officer already mentioned as having been appointed at Manchester six years earlier was then appointed at Islington; this officer died in 1909, but veterinary meat inspection has been continued. The first few years of this century saw a considerable expansion of the Veterinary Meat Inspection Service, but principally in the industrial area of Lancashire and Yorkshire. Sheffield commenced this expansion in 1901, and here also the veterinary meat inspection has continued, but a number of other towns—notably Hull, Newcastle, Leeds, Halifax, Bradford, Cardiff and Stoke-on-Trent—also appointed veterinary surgeons for meat inspection, and at the same time the larger bacon factories took a similar course: it is reported that these bacon factories found veterinary advice as regards pigs most useful.

In 1909 the City of London Health Committee appointed the first Veterinary Inspector in charge of the food inspection at Smithfield Market; in 1920 the Birmingham Corporation which had for many years maintained a veterinary department for other duties, put the meat inspection in charge of their veterinary staff, and in 1926 the important slaughtering establishment of Birkenhead appointed its first Veterinary Meat Inspector. It can be said that from about 1900 municipal authorities throughout the country were displaying great interest in meat inspection, and that Medical Officers of Health in general were coming to recognise the useful work which veterinary surgeons could perform in that field.

Following the introduction of the Milk and Dairies Order, 1926, many county councils established veterinary services, and in many instances the whole-time veterinary inspectors employed by the county councils were giving valuable help in meat inspection to the sanitary inspectors employed by local sanitary authorities, and those inspectors were showing a yearly increasing appreciation of the advice and help which they could obtain in meat inspection from the county veterinary officers.

In 1932 one of our colleagues in the service put forward in public a scheme whereby the county veterinary service could have taken over meat inspection throughout the county areas, and at that time there was a growing movement for the employment of veterinary surgeons as meat inspectors in the county boroughs. In 1937, however, came the great "frost": when the action of the Ministry of Agriculture and Fisheries virtually destroyed the county veterinary services, they attracted at the same time nearly all the municipal veterinary officers who had been engaged in meat inspection, in addition to the inspection of dairy cows, and it is to be feared that at that time the claim of the veterinary profession to be engaged in meat inspection was practically abandoned. The present activities in meat inspection of the Ministry of Food are unsatisfactory. It is true that that Ministry has a veterinary surgeon as Technical Adviser, and the Ministry of Food has borrowed a number of veterinary surgeons from the Ministry of Agriculture, but these veterinary officers now representing the Ministry of Food are less concerned with meat inspection in the proper sense, than as the representatives of the owners of the meat who are concerned merely with getting as much passed as possible. There is still a chance for the veterinary profession to claim its rightful place in meat inspection.

In 1937 the Ministry of Agriculture and Fisheries through its "Cattle Committee" decided to establish three experimental factory abattoirs, and in 1938 or the early part of 1939, it was decided that these should be at Edinburgh, Leeds and Leicester, but before they could be established the war intervened. The word "experimental" in the title suggested that the proposal was limited to three, so as to gain experience of centralised slaughtering, and it appears to me that such experience is now being gained under the improvised scheme of the Ministry of Food. In my opinion the old private slaughterhouse will never resume activity; I believe that after the war the slaughter of animals for food will be conducted in large factory abattoirs serving regions and that in these establishments the preparation of slaughterhouse by-products will be carried out. At our Annual Congress in 1939 I had an intimate conversation with the Chief Veterinary Officer of the Ministry of Agriculture and Fisheries and explained to him how important it was that veterinary surgeons should administer completely these factory abattoirs, but I entirely failed to even rouse that officer's interest in the subject. In spite of that I am convinced that factory abattoirs will be the future system, and I am further convinced that it is the duty of the Ministry of Agriculture and Fisheries to see that they are administered by competent veterinary surgeons, experienced in meat inspection, and that they shall be provided with a sufficient staff of veterinary surgeons for the proper inspection of the carcases and organs of all animals slaughtered there; in fact it is my opinion that the organisation responsible for the control of animal diseases is incomplete and severely handicapped in its work, if that organisation has not at the same time complete control of the slaughtering establishments.

Addendum.—It is considered that the appointment of a veterinary surgeon as Chief Inspector at Smithfield Market, London, is not entirely satisfactory to the veterinary profession. No veterinary assistant has been appointed and the work is still being done by sanitary inspectors. The first officer appointed spent so much time away from his post on military service and on world tours, that for long periods food inspection was entirely carried out at Smithfield by sanitary inspectors, and at the present moment the officer who should be at Smithfield has been seconded to the Ministry of Food for more than four years, so that in any argument between our profession and the sanitary inspectors, it is feared that the veterinary claim would not be a strong one.

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Meat Inspection in Scotland

In early days in Scotland the Trade Incorporations exercised supervision and some measure of control over their respective crafts. Thus the fleshers were charged with the duty of daily inspecting their craft, and in some places they were endowed with rather drastic punitive powers against purveyors of "infected flesh or fish," and those who kept "rotten putrefied beasts which have died of themselves." In course of time the Trade Incorporations lost these powers. As Municipal Government developed Town Councils assumed responsibility for the inspection of meat and flesh markets, and for the control of slaughterhouses, and the slaughtering of animals for human food. For these purposes, Town Councils enacted rules and regulations and appointed inspectors to enforce the rules. The records of the times do not indicate that the inspectors possessed any qualifications for the duties they were appointed to carry out, but they do leave the impression that the inspectorate failed to control the trade in diseased and unsound flesh which appeared to flourish.

From about 1850 onwards, clauses appeared in local and general Acts of Parliament which provided a foundation on which a very efficient system of meat inspection could have been organised, at least in the burghs. Town Councils were empowered to erect and maintain public abattoirs to the exclusion of private slaughterhouses, which were to be closed without compensation. With seven exceptions all the burghs in Scotland, no matter how small, provided public abattoirs and, by the concentration of slaughtering in a single centre in each community, created the conditions under which efficient inspection became a practical possibility. Unfortunately there was no development along these lines, but nevertheless it was the almost universal provision of abattoirs in the burghs in Scotland which paved the way for the Meat Regulations (Scotland) of later years.

Professor Walley, Principal of the Royal (Dick) Veterinary College (1874-1894), was the pioneer in Scotland of the application of scientific knowledge in the inspection of meat. His book, "The Four Bovine Scourges," published in 1879, contained an appendix on the subject, and he states that, for many years prior to that date, he had annually dealt with the subject in his lectures on Cattle Pathology to students of the Royal (Dick) Veterinary College. It is a fair assumption that these lectures represented the

beginning of systematic instruction in meat inspection to veterinary students in Edinburgh.

Between 1879 and 1890, when his "Practical Guide to Meat Inspection" was published, Walley took advantage of many public opportunities to press his view that "veterinary surgeons as they are or ought to be trained at the present day, are the proper consulters as to the conditions of flesh from animals that have suffered from any pronounced form of disease." Indeed, the publication of his book was the direct result of pressure following presentation of a paper on the subject at a Sanitary Congress in Glasgow (1888).

Walley was associated with the Edinburgh Abattoir in an advisory capacity from about 1874, but he had no responsibility for the organisation and direction of the work of meat inspection. There can be no doubt, however, that his influence contributed to the appointment by Edinburgh Corporation in 1892 of two veterinary surgeons, charged with duties in relation to meat inspection, as a sequel to the publicity given to a rather scandalous case of the sale of an anthrax infected carcase by a prominent firm of butchers in the City. Since that date the Veterinary Officers of the Corporation have been responsible for the work of meat inspection.

The Public Health (Scotland) Act, 1897, specified for the first time the qualifications to be possessed by those charged with the duty of meat inspection. Prior to that date, it was sufficient for a person to be appointted by the Town Council and the choice generally fell on farmers, butchers or those employed officially in some capacity about slaughterhouses—men generally with practical experience of the meat trade, but without knowledge of disease and its effects on the flesh of animals.

The Act of 1897 limited the power to seize meat to the Medical Officer of Health, Sanitary Inspector or a Veterinary Surgeon approved by the Local Authority for the purpose. Further limitation was imposed by the Public Health (Meat) Regulations (Scotland), first promulgated in 1923, in terms of which every Local Authority in Scotland was called upon to appoint a Meat Inspector on whom devolved responsibility for carrying out the regulations under the direction of the Local Authority. Persons competent to act as Meat Inspectors were defined as the Medical Officer of Health or the Veterinary Surgeon approved in terms of the Act of 1897.

The Public Health (Meat) Regulations (Scotland) 1923 followed on the report of a Departmental Committee appointed by the Scottish Board of Health which was issued in 1922. There were five veterinary representatives on this Committee and they played an all-important role in framing the recommendations on the procedure to be followed in the routine inspection of carcases and viscera of animals slaughtered for human food and on the standards of judgment which were to be the basis of seizure. The recommendations of the Committee were adopted for the purposes of and incorporated in the regulations. In England a similar Departmental Committee of the Ministry of Health, with one veterinary representative, also reported in 1922, having adopted the recommendations of the Scottish Departmental Committee on the procedure of inspection and standards of judgment. Their recommendations were promulgated by the Ministry of Health in the document known as Memo 62 (Foods), but they have never been given the force of law in the same way as the recommendations of the Scottish Departmental Committee. And there is no doubt that it was the more favourable position of Scotland in respect of the provision of public abattoirs which made this development possible.

Stewart Stockman edited several editions of Walley's Meat Inspection, after the death of Walley in 1894. Since writing the above, I have looked through the fifth edition (1909), in which there is reprinted Stockman's introduction to the fourth edition (1901). It contains the following which may be of interest:—

"The Corporation of Edinburgh has reason to be proud of the part it has taken in the advancement of meat inspection. Not only has it acted as the guardian of a veterinary school, but it was the first municipal body to organise a qualified staff of Meat Inspectors, and it has been able to supply them to other towns, which are beginning to see the wisdom of appointing suitably educated officers.

"The report of the Tuberculosis Commission (1898) says: 'We may add that in the Edinburgh Public Slaughterhouse we witnessed meat inspection carried on more nearly on the enlightened system of the best continental abattoirs than it was our fortune to see in any other part of the United Kingdom. Here there are six meat inspectors, of whom four are veterinary surgeons, one has been a butcher, and one a cattle salesman. We were very favourably impressed with the organisation, though the standard by which the meat of tuberculous carcases was judged appeared to us unnecessarily severe' (Report p. 7, sec. 21).

"I would like here to state that the present condition of things in Edinburgh is largely due to the advice given to the corporation by the late Professor Walley, Principal of the Dick College."

The first appointments in Edinburgh on a whole-time basis in connection with meat inspection were made in 1892, two veterinary surgeons, Mr. John Riddoch and Mr. George A. Thomson, being appointed in that year. My own appointment to the city service dates from December, 1914.

With regard to the position in Glasgow, the following extract from a letter from Mr. Abbott, now Chief Veterinary Officer in Glasgow, now explains the position in that city:—

"The date of Mr. Trotter's appointment was May 1st, 1897. His duties on appointment had to do solely with milk and dairies work. He took over the duties of meat inspection on June 1st, 1900, and was the first veterinary surgeon appointed in Glasgow for that purpose. Prior to that date meat inspection in Glasgow was under the dual control of the Chief Constable and the Sanitary Inspector. The former undertook the work of inspecting all carcases slaughtered in the different public abattoirs, whilst the latter supervised the meat brought into the city, and consigned to various butcher shops, factories, etc."

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(III) "MILK" IN (*a*) ENGLAND AND WALES AND (*b*) IN SCOTLAND

We have already briefly indicated the transfer of "Milk" from local to central authority for veterinary control since the passing of the Agriculture Act 1937, and it now represents one of the chief functions of the Animal Health Division acting through the whole-time and part-time inspectorate. The milch cow has, within a generation, supplanted the horse as the domesticated animal of chief economic importance, and with the rapid progress of scientific knowledge regarding the value of milk in human nutrition and of the methods of breeding and maintaining the cow for efficient production of milk the scope for veterinary work within this new field has expanded to a degree that was scarcely imagined by the promoters of the original Charter. Certain enlightened men, like William Youatt, it is true early foresaw the possibilities, when they, acting through the Royal Agricultural Society of England, pressed for the inclusion of teaching upon Cattle Pathology in the veterinary curriculum. Even the importance to the State of the control and eradication of such grave menaces as cattle plague (rinderpest), pleuro-pneumonia, and foot-and-mouth disease did not greatly impress upon the minds of authority the urgency of imparting a thorough knowledge of cattle disease upon the veterinary graduate. The horse still remained economically supreme. As late as 1913, when the Hopkinson Committee deliberated upon the shortage of recruits for the public veterinary services, it was found that for the Army the training was perfect, but for the other services the attraction offered was not at all alluring. It had been principally through the development of a consciousness that somehow cattle with their proneness to suffering from tuberculosis constituted a danger to the human population that a feeling was aroused about the importance of this species as deserving concentrated veterinary attention. Koch's discovery of the tubercle bacillus in 1882 gave impetus to this orientation, but at first it was directed in the main, as most certainly it was on the Continent, to the flesh of these animals as comprising the chief danger. It was only slowly that the transcendence of milk as the vehicle of infection became impressed on the veterinary and the public mind, and a landmark is presented by the historic British Congress on Tuberculosis held in London in 1901, which led to the formation of the Royal Commission on Tuberculosis, which again clearly resolved the factors of danger. In the following two contributions the story of the present rise to veterinary supremacy of the milk issue is well presented. From the agriculturist's standpoint, however, contagious abortion, the causation of which was elucidated by Bang in 1890, is perhaps a major issue. No less important economically is the rise in importance of bovine sterility and infertility within the last half-century. Johne's disease has also become a rather baffling problem. These developments are mentioned merely for their place as affecting the general trend of outlook of the veterinary profession in the course of the latter part of the period under celebration. Their examination in other respects need not detain us; they all need, however, to be kept in mind so as to view the course of events in their proper perspective.

For this reason we are fortunate in having obtained summaries from two contributors who have had intimate experience of the veterinary milk issue from its origin to relate the story so far as it concerns separately both England and Wales, and Scotland.

Milk—with Special Reference to England and Wales

The history of the commencement of systematic inspection or supervision of dairy cattle is somewhat uncertain, but as far as my experience takes me, the prime mover in the highly necessary work was the late Dr. James Niven, of Manchester. It is indeed on record that when he was Medical Officer of Health for Oldham, prior to being appointed to Manchester he has assiduously caused to be inspected many of the cattle from which milk was supplied to that Lancashire borough.

On his appointment to Manchester he appears to have concentrated on this work, probably because of the greater opportunity and the assistance which he was able to obtain, not only bacteriologically, but also from a veterinary point of view from Mr. James King, who at

that time was chief Veterinary Inspector to the City, but whose work was confined entirely to the inspection of meat and the carrying out of the very superficial requirements of the Contagious Diseases of Animals Act. King was a great character. He soon saw that what Niven was after was no mere enthusiasm for a new field, but there were undoubtedly a very large number of cattle from which the milk supply was, of necessity, dangerous. King carried out a valuable survey of all the cattle which were housed within the City boundaries and a number of these were found to be suffering from tuberculosis of the udder, and probably some other forms of tuberculosis. This was about 1896 and it was about this time that Niven enlisted Professor Delepine, at that time professor of pathology at Owen's College. Their work is on record and I am sorry that I have no copy of it, but they produced sufficient facts to show that something should be done to protect the citizens against milk-borne tuberculosis. Professor Delepine's survey covered not only samples from cows in the City but also from farms sending milk in from the country districts surrounding it. This was a very careful piece of work and is on record in the City Health Reports compiled and issued about that date. Niven then persuaded the City Council to apply for special powers to deal with the infection from the country sources. In a General Powers Bill of 1899 special clauses were included with the object of dealing with these sources of infection. The clauses submitted, however, bore no likeness to those which were eventually obtained in the General Powers Bill, the special clauses of which became afterwards known as the Model Milk Clauses. These milk clauses were not of very great value inasmuch as there was so much delay over the preliminary work before the sources of production could be approached or inspected. Samples of milk were taken within the City boundaries at railway stations and from carts coming into the City. These samples, which were accompanied by full particulars of the sources of supply, were then sent to Professor Delepine for bacteriological investigation and in the course of a month the report was available as to whether the supply was tuberculous or not. When such a sample was found to be tuberculous certain procedure was necessary. First of all a magistrate's order had to be obtained, authorising entry to the particular farm or farms, and the veterinary surgeon, whoever he might be, who was required to carry out the inspection had to be accompanied by the Medical Officer of Health or his representative who carried his authority in writing. The first result of the passing of these Clauses was the appointment of a veterinary surgeon to carry out this work, and Mr. J. S. Lloyd, F.R.C.V.S., later of Sheffield, was the first occupant of this post, and to him must go much of the credit for the preliminary work. As already pointed out, at the end of twelve months Lloyd moved on to Sheffield and I was appointed in his place in 1901, finding the plans for working fairly well established.

The work could be divided under two heads: that carried out under the Milk Clauses on the farms outside the City, and the inspection of cattle within the City under the old Dairies, Cowsheds and Milk Shops Order. We will deal with the City work first. Here I found some 1,500 cattle housed within the confines of the City boundaries. Some were in slums with no pasturage whatever; others were more fortunate and had pasturage of a sort, but much of this pasturage was tainted with industrial fumes and deposits and was of no great value from a nutritive point of view. For all that there were certain cowsheds in the City which contained some very fine animals, the cowkeepers being very proud of their cows and, although most of them bought milk from the country, they were proud to be able to show their customers a few good fat cows from which they said all their milk was derived. My first decision was to close all those places which were in the built-up area of the City or had no pastureland, and with the others, if the buildings were defective and the provision for the satisfactory handling of milk was not adequate, specifications were prepared and served upon the owners to be carried out as quickly as possible. In this way some very excellent cowsheds were obtained and lines definitely laid down for model cowsheds without any undue stress being laid upon a fixed cubic area per cow. The numbers of cows so kept were gradually reduced until they came below 1,000 and these were systematically inspected as often as possible; any suspicious animal removed was usually sent into the City abattoir to be slaughtered. Many cases of tuberculosis of the udder were thus dealt with without delay. Later on, when some extension of the City boundaries was carried out, a very large increase in the cattle population of the City was effected, but as most of these cowsheds belonged very largely to one landlord, were well constructed and required but little alteration, the cattle also were good and this was a prominent feature of this work, that where adequate housing was available the cows kept were usually of a high order. This does not mean that they failed to produce the usual crop of tuberculosis—far from it—but gradually the system of cow keeping changed, and what was known in the North country as the "one note" system was adopted so that at the end of a cow's milking period she was fat and automatically went to the butcher. To some extent we were responsible for this as I continually urged upon the people that the heavier the milker and the older the cow the greater the risk to the consumer public. This work of systematic inspection was checked from time to time by control of mixed samples taken at the various sources of production and submitted for examination in the usual way. I may add here that in all these cowsheds washing facilities were provided and the milkers were required to wash their hands before proceeding to milk, and where possible it was required that clean towels should be provided by the owner. This was not always easy; the owners complained that the towels were pilfered and frequently used for purposes for which they were not intended, such as cleaning dirty boots. But gradually the pressure had its effect and a very high standard of cleanliness was reached in the milk produced within the City.

Now let us turn to the work done outside the City. I have pointed out already the preliminary steps necessary to be taken before a farm could be visited outside the City boundaries and this led at times to annoyance and delay, because numerous Justices of the Peace refused to sign orders authorising entry to the farms. But having achieved entry we were almost invariably met by non-co-operation and virulent abuse and it required much tact and patience to get the work done. Certain prosecutions were made for obstruction in the carrying out of one's duty, but we found that this gave rise to so much bitterness that as far as possible it was better to proceed without if one could. I can sincerely say that in those early days the first two years were most unhappy, from having dogs set on one to being threatened with shot guns. In justice, however, it must be said that some of the people who were the most difficult at first, eventually became our most sincere co-operators, ready at all times to do anything we asked.

The Milk Clauses, as perhaps I should have said earlier, contained clauses requiring the notification by the farmer that he suspected a cow or cows of suffering from tuberculosis of the udder, but it must be said that this notification clause was a failure from the very commencement and although certain prosecutions were laid under this clause it was not always with an easy mind that one prosecuted an individual for failing to do something of which we knew, or thought we knew, him to be ignorant.

I then, having taken stock of the work as the years proceeded, decided that the indiscriminate inspection of herds was not of very great value. It certainly removed the source of infection for the time being, but there was no guaranteeing that other sources would not crop up immediately, for there was a limit to the amount of money which was available for the examination of mixed samples, and this expenditure was spread over the whole area as much as possible and was devised so as to cover every farm supplying the City once in two years. I came to the conclusion that having once found tuberculous milk in the supply it could be taken as an indication of a fairly heavy infection being present on the farm and all these farms were put on a rota for regular inspection. These inspections were carried out without any of the preliminary legal requirements being observed, but entirely with the consent of the farmers, many of whom used regularly to correspond and ask for inspections to be carried out, or say that they had animals with which they were not satisfied, seeking professional advice. In these cases one occasionally found it necessary to say that they should consult their own practitioners as it was not part of our business to interfere with the work of the general practitioner.

This work continued, as far as I am concerned, up to 1914-18 when we were otherwise occupied, and that period was a disastrous one, for on its resumption we found heavily infected cows in herds that had been much improved before. But as soon as possible most of these people who were recognised as being on the regular panel were only too willing to do all they could to improve matters. Throughout the whole of this period every cow that was condemned was slaughtered in my presence and a *post-mortem* examination was made and the records kept. These records were included with the whole work in the Health Reports of the City of Manchester issued every year. I may add that a large fever hospital was supplied for very many years with tubercle-free milk and I think that if the records are turned up this herd, a big one, will be found to be the first to be successfully cleared and maintained clear for a number of years. The initial work has been reported in *The Veterinary Record* of 1903 or 1904.

It may be interesting, at this stage, to state that in the light of our accumulated experience the City applied for more extensive powers in their General Powers Bill of 1904. The Ministry of Agriculture opposed these clauses, which for the sake of the Bill had to be given up, and incorporated in the Bill was a clause giving a milk producer right to appeal. It was thought that this Appeal Clause might be made much use of where a producer was summoned to show cause why an order should not be made upon him to cease sending milk into the City. In point of fact, however, quite a number of such orders were made, but in no case was any appeal lodged; for all that this was a very drastic power and one that could only be used when everything else failed.

It may be concluded, from the tenor of my notes, that I am of opinion that the work done was not valuable. On the contrary, I have always regarded it as of the utmost value, not only in that it did afford some protection to the consuming citizens of Manchester, but the experience gained threw much light on the practical problems to be used in trying to get a clean milk supply.

The mere fact that whereas in the early days of the work advanced cases of disease were common, as the years went by they became much more rare and the really advanced case of tuberculosis of the udder passed out of our ken, clearly indicated progress.

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"Milk"—with Special Reference to Scotland

The production of milk in the United Kingdom is governed by a multitude of laws and ordinances, many of which are overlapping and some completely out of date. A number of these have recently been unified and simplified in England and Wales by the passing of the Food and Drugs Act of 1938, but no such simplification has been achieved in Scotland, although it must be admitted that in Scotland legislation was never quite so complex as in England. Moreover, the White Paper on Milk (Cmd. 6454) brought in by the Government in July, 1943, with a view to improving the Nation's milk supply, proposes further unification of control in England and Wales subject to the sanction of Parliament, which is now being sought. These measures, if passed, would bring the control of the production side of milk under the Ministry of Agriculture and Fisheries which in practice would be exercised by the Animal Health Division of the Ministry and thus place it in the hands of veterinarians.

One of the reasons for the omission of Scotland from the new proposals is that while in England and Wales the local authority responsible for milk control is the council of a county borough, a non-county borough or an urban or rural district council (and as the numbers of these bodies are very great it thus leads to greater lack of uniformity), in Scotland, on the other hand, the control is vested only in the county councils and the councils of a few Royal Burghs, which are few in comparison with those south of the border. Under the old legislation in England and Wales the county councils had a supervisory power over the local sanitary councils in their respective counties to see that the conditions were efficiently carried out. This power was only too frequently not exercised, but the county authority could in extreme cases go to the Ministry of Health and ask that milk control should be taken away from the delinquent district council and given to the county. The production of graded milk, produced under the Milk (Special Designations) Orders has, since 1936, been subject to the control of either the county council or the county borough and not the smaller authorities.

In Scotland, milk production is governed by the Milk and Dairies (Scotland) Act of 1914, which owing to the last war did not in fact come into operation until September 1st, 1925, and by the Milk and Dairies (Amendment) Act of 1922 which came into active being on September 1st of that year. As stated, these Acts place the control of milk production on the local authority which in Scotland is only the county councils and the councils of a few Royal Burghs. It is usually the medical officers of health of these authorities who are held responsible for their administration. Supervision of the work of local authorities is vested in the Department of Health for Scotland, which in Scotland is virtually the same as the Ministry of Health in England. Section 3(1) of the Milk and Dairies (Scotland) Act says: "Every local authority may, and when required by the Board* shall, appoint one or more members of the Royal College of Veterinary Surgeons to act as veterinary inspector or inspectors under this Act. . . ." Most local authorities appointed at least one whole-time veterinary officer and some had veterinary departments with a chief veterinary officer and one or more assistants. In certain counties only part-time veterinary surgeons were appointed, but no such appointees were allowed to engage in private practice in the area in which they held office without the sanction of the Department of Health, but as the Department did not favour this concession very few such appointments were in fact made. In small counties two or more might join together and appoint one veterinary officer between them. As a general rule the veterinary staff were under the administrative control of the medical officer of health, but in some cases the whole of the administration of the Milk and Dairies legislation was in the hands of the veterinary staff. In others, the control of milk hygiene, buildings, equipment, method, etc., was left to the medical officer who usually deputed these duties to his sanitary inspectorate, the health of the cattle being under the veterinarians.

On the passing of the Agriculture Act of 1937 all this was changed and all county veterinary officers (except one) and several of the city municipal veterinarians were taken over by the Ministry of Agriculture and Fisheries, from April 1st, 1938. While what may be termed the strictly veterinary duties were transferred to the Ministry, thus relieving the local authority of some of its responsibilities for animal health, the supervision of the general conditions under which milk is produced has been left with the local authority who have now in most cases no veterinary staff in their employment. In one county, one of the veterinary staff was not taken over by the Ministry, but was kept on by the county council and employed on the sanitary duties connected with milk hygiene, and also for meat inspection, but this officer has now been seconded to the Ministry of Food, at least for the time being. In yet another county a veterinary practitioner has been appointed as a part-time officer of the county to act as a sanitary inspector for the purposes of the Milk and Dairies Acts and Orders, but he is not in this capacity responsible for the health of the cattle in his county. Only in the cities of Edinburgh and Glasgow is there now a whole-time veterinary staff, but it is only in Edinburgh that they are responsible for carrying out the general conditions of the Milk and Dairies legislation.

In 1938 the Department of Health for Scotland appointed a chief milk inspector to be stationed at Headquarters in Edinburgh in control of a staff of assistants stationed in various districts in Scotland, whose duties were to consist in endeavouring to secure a greater measure of uniformity in the administration of the Milk (Special Designations) Order in the different counties. It had been evident in England and Wales that a very great disparity existed as between county and county in the standard required for the issue of licences under the Order for the production of tuberculin-tested and accredited milk and it was hoped by these means to prevent such inconsistencies in Scotland. It was at that time anticipated that the bonus which the Government then proposed to grant for "standard milk" (analogous to "accredited milk" in England and Wales) and for tuberculin tested milk produced under the Special Designations Order, would bring about a great increase in the number of producers who wished to qualify for the bonus. This, in fact, has been the case. These officers advise local authorities as to the standard of buildings, equipment and hygienic requirements necessary and also act as sort of referees on behalf of the Department of Health in cases of dispute or complaint. They have now gone further than this and carry out surveys of the standard of production of ordinary milk in the various counties, and not only of the graded herds, and suggest improvements to the local authorities. As regards veterinary control there are no veterinary surgeons on the staff of the Department of Health, the Animal Health Division of the Ministry of Agriculture and Fisheries being responsible for the veterinary duties such as tuberculin testing of T.T. herds and for the clinical examination of all dairy cattle.

The 1914 Act prescribes that "It shall be the duty of the veterinary inspector from time to time, and once at least in every year, to inspect the cattle in every dairy in the district," and the Act also empowers the local authority to arrange for the inspection of cows in non-registered premises from which the occupier sells milk only in small quantities. The Ministry's staff, whole or part-time, carry out these inspections regularly as a routine measure but in many cases visits are paid to registered dairies two, three or even four times a year, and when possible to cows on non-registered premises. The Ministry's divisional inspector reports to the local authority any cow in the herd which in the opinion of the inspector "shows signs or symptoms of any disease which would injuriously affect the milk, or render it unfit or unsafe for human consumption." It is then the duty of the local authority to see that such milk is not used until the condition of the cow is such as to render the milk safe. In some cases, but probably only in a percentage, the local sanitary inspector does, in fact, follow up this report. During routine inspection if any animal is found showing symptoms which would bring it within the scope of the Tuberculosis Order, it is immediately dealt with accordingly.

The divisional veterinary inspector also sends a quarterly report to all local authorities within his district, showing the type and number of herd inspections carried out in their areas, the number of cattle examined, those found to be affected with scheduled forms of tuberculosis, the number of cattle tested with tuberculin in graded herds, the percentage of reactors and so on.

Under the Act the local authority is obliged to make Dairy Byelaws pertaining to the inspection of cattle, the cleanliness of the milk produced, byre and dairy construction, etc. These byelaws must be adopted by the local authority and approved by the Department of Health before they can become operative.

The Milk (Special Designations) Order (Scotland), 1936.

By this Order the local authorities are authorised to license producers of high-grade milk to produce and sell milk as "certified," "tuberculin-tested" and "standard," and also to license the sale of milk as "pasteurised" if such milk has been heat-treated under the conditions prescribed in the Order. Milk sold under the above

* Now the Department of Health.

designations must conform to a definite standard of cleanliness as laid down, and in the case of "certified" and "tuberculin-tested" milk, all cattle of the herd of production must have passed a prescribed tuberculin test. It is laid down that "Every person who applies for a licence shall satisfy the local authority that his arrangements for the production, storage, treatment and distribution of milk as the case may be, are such as to comply with the conditions subject to which the licence may be granted."

As regards "certified" and "tuberculin-tested" milk, an applicant who applies for a licence for the first time must submit a veterinary surgeon's certificate that every animal of the herd has passed a prescribed tuberculin test within a month of application being lodged (unless the herd is already an "attested herd"), and that the said animals have passed a clinical examination within the same period. Further testing and the clinical examination of the herd after the licence has been granted, are undertaken by the Ministry of Agriculture and Fisheries. For a "standard" licence, the same applies as regards a clinical examination, but no tuberculin test is required. Tuberculin tests for licensed herds are usually carried out every six months, although after two clear consecutive half-yearly tests, testing once only every year may then be allowed. The clinical examination must be carried out three times a year in all cases. It is the duty of the Animal Health Division of the Ministry to supply the local authority with the necessary tuberculin test and clinical certificates at the proper time. As a matter of fact there are now very few "tuberculin tested" or "certified" herds in Scotland which are not at the same time "attested."

The Attested Herds Scheme

Although not directly connected with the municipal services, it is impossible to discuss milk production in Scotland without mentioning this scheme. The "Attested Herds Scheme" is sponsored and carried out by the Ministry of Agriculture and Fisheries under the powers contained in the Agriculture Act of 1937. This scheme, which is the first step in the national campaign for the complete eradication of bovine tuberculosis, insists on every bovine on an attested farm being free from tuberculosis as indicated by each animal passing the tuberculin test, and not only the milking herd and those animals in contact with them as is the case for T.T. herds. As regards freedom from tuberculosis the "attested herd" takes precedence so to speak over those licensed to produce "tuberculin-tested" milk and the local authority accepts the attested herd as regards freedom from tuberculosis for the purpose of its licence, although it should be pointed out that in attested herds no notice is taken of the hygienic conditions under which milk is produced.

Power to take milk samples for cleanliness tests and for submission to the biological test for tuberculosis rests with the local authority. Should, however, the medical officer of health suspect disease among the cattle which in his opinion may cause disease amongst those drinking the milk, he must inform the Ministry's divisional inspector whose duty it is to arrange for an investigation and take what steps are considered necessary in the circumstances.

In Scotland several of the larger local authorities have laboratories run by their own staff where milk counts, biological tests for tuberculosis and other bacteriological and chemical tests are carried out.

The Scottish Department of Health has, along with the Milk Marketing Board and other interested parties, arranged for a Milk Testing Scheme for milk arriving at creameries. Where the scheme is in operation certain tests are carried out and where the milk of a producer fails to pass a certain number of such tests the local authority is informed in order that its milk officers can visit the faulty producer and advise him or her as to improvements. The veterinary surgeon in such cases is not likely to be called in, unless it be in one of the rare districts where a veterinarian is carrying out the sanitary duties.

At the present time with the changes imminent in England and Wales, it is only natural that many rumours are current as to possible alterations in the Scottish administration. It is to be hoped that if and when any changes are brought about, a greater and fuller use may be made of the veterinary profession than is the case to-day.

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(d) Public Veterinary Services

Eire

The Minister for Agriculture is the Central Authority for the purposes of the Diseases of Animals Acts. The following diseases are controlled by Order made by the Central Authority: Cattle plague, contagious bovine pleuro-pneumonia, sheep pox, swine fever, glanders, epizootic lymphangitis of equines, parasitic mange, anthrax, rabies, foot-and-mouth disease, certain forms of bovine tuberculosis. In addition, Orders are in force dealing with sheep dipping, warble fly infestation of cattle and epizootic abortion of cattle.

The staff of veterinary surgeons appointed to deal with the control of animal diseases consists of:—

1 Chief veterinary officer.
1 Deputy chief veterinary officer.
3 Superintending inspectors.
3 Portal supervisors.
2 Transit inspectors.
31 Veterinary inspectors.

In addition, 42 lay inspectors are employed at Ports to assist the veterinary staff in the execution of their duties.

The Orders dealing with cattle plague, contagious bovine pleuro-pneumonia, foot-and-mouth disease and swine fever are administered by the veterinary staff of the Department of Agriculture. With the exception of these diseases, the administration of the Orders dealing with the other animal diseases already mentioned is in the hands of the local authorities, under the control and supervision of the Department. Each local authority is by law required to appoint as many veterinary inspectors as may be needed for the purposes of the Diseases of Animals Acts. At present there are 126 local authority veterinary inspectors throughout the country, of whom 116 are part-time practitioners, the other ten being part-time officers of corporations. In Dublin, there is one chief veterinary officer of the Dublin Corporation with six permanent assistant veterinary inspectors, whose duties include supervision of the meat and milk supplies for Dublin City, the enforcement of the Orders made under the Diseases of Animals Acts and the Slaughter of Animals Act. In addition, the chief veterinary officer is superintendent of the municipal abattoir.

The veterinary staff of the Department of Agriculture, under the chief veterinary officer, is charged with the control of scheduled animal diseases, the prevention of the introduction of such diseases into the country, the transit of animals by land or sea, the inspection of all animals exported from the country, the regulation of the importation of animals into the country and inspection thereof, the regulation of the importation of animal feeding-stuffs, litter and other substances, whether of animal origin or not, through which disease might be introduced into the country, the disinfection of persons or things coming into the country as considered necessary.

Advice is also given to practitioners in cases of serious mortality among animals and investigation made into losses due to obscure causes on behalf of practitioners or owners. The headquarters staff also advise local authorities on sheep dipping schemes and supervise the work of sheep dipping inspectors and inspectors appointed under the Warble Fly (Treatment of Cattle) Orders. Lectures on veterinary hygiene are given to students of agricultural schools and to bodies of farmers from time to time by members of the headquarters veterinary staff.

Under the control of the Department of Agriculture is the Veterinary Research Laboratory at Thorndale. The staff consists at present of:—

1 Director.
1 Research officer.
8 Veterinary officers from headquarters staff.

The principal functions of the Research Laboratory are:—

(*a*) Diagnosis and advisory work;
(*b*) Preparation of vaccines for issue to veterinary surgeons;
(*c*) Research work.

Diagnosis of specimens forwarded by practitioners or departmental officers in connection with scheduled diseases is carried out. Advice on disease problems is given to practitioners.

Under the control of the Department of Agriculture is another veterinary service dealing with the Fresh Meat Acts, the Pigs and Bacon Acts and the Slaughter of Cattle and Sheep Acts. These Acts provide for a uniform system of veterinary inspection by veterinary surgeons of fresh meat and offals intended for exportation, for ensuring suitable conditions of factory premises and correct methods of dressing, packing and conveyance of the products. There is *ante-* and *post-mortem* veterinary examination of all animals. Under the Slaughter of Cattle and Sheep Acts, 1934 to 1936, all canning factories are subject to examination as to suitability, cleanliness and equipment. All meat or offals used in canning factories must be from animals which have been examined and passed *ante-* and *post-mortem* by a veterinary examiner who is a veterinary surgeon. All processes are under constant supervision and samples are tested bacteriologically from each batch.

The staff engaged in the above work consists of :—

1 Senior inspector.
1 Supervising veterinary inspector.
1 Superintending veterinary officer.
33 Veterinary examiners (whole-time).
12 Veterinary examiners (part-time).

All those officers are veterinary surgeons. In addition, 23 lay inspectors act as assistants.

Attached to the Department of Local Government and Public Health is a veterinary service comprising two superintending veterinary inspectors whose duties are to advise the Minister on veterinary matters and superintend the work of officers of local authorities engaged in the inspection of food, chiefly food of animal origin. The legislative measures concerned are the Public Health Acts, the Milk and Dairies Act, The Food and Drugs Act and the Regulations and Orders made thereunder. Under the Local Government Act 1925, local sanitary authorities are compelled to appoint one or more veterinary inspectors. These inspectors are mainly part-time except in four boroughs and one county. Veterinary inspectors have the powers of sanitary officers in regard to inspection of premises and taking of samples.

The superintending veterinary inspectors are responsible for the inspection of premises under the Milk and Dairies (Special Designations) Regulations, and of pasteurising premises and plant, and are concerned with the carrying out of Regulations where milk is sold by licence. Supervision of the inspection of meat is carried out in those areas where local authorities have adopted byelaws regarding the sale of meat under the 1929 Meat Inspection Order.

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Northern Ireland

In Northern Ireland the State Veterinary Service has grown steadily since 1932 as more and more duties were asked to be taken over by the staff. There are now just over 100 full-time veterinary officers in the Service as compared with roughly 20 in 1932. The duties performed by the staff are very varied and come under the following headings :—

1. Diseases of Animals Acts.
2. Milk and Dairy Inspection.
3. Meat Inspection.
4. The Meat and Livestock Scheme as an agency service of the Ministry of Food.
5. The Cattle (Eire) Import Regulations.
6. Laboratory Diagnosis and Research.
7. The Examination and Purchase of Premium Horses, both light and heavy (under the Ministry's Horse Breeding Scheme) and the passing of all stallions for soundness and for service.

1. *Diseases of Animals Acts.*—The staff has full control of all diseases and is entirely responsible for the export to and the import of all stock from Great Britain.

2. *Milk and Dairy Inspection.*—The veterinary staff of the Ministry is responsible for the inspection of all herds and of all premises on which milk is produced.

3. *Meat Inspection.*—All meat and meat products intended for export are subject to inspection by the whole-time veterinary staff of the Ministry. All bacon factories are under veterinary control for meat inspection purposes.

In peace-time conditions the veterinary staff was responsible for the grading of pig carcases in all bacon factories.

4. *The Meat and Livestock Scheme.*—This scheme in all its stages is carried out by veterinary officers of the Ministry. Fat cattle and fat sheep are purchased by selected veterinary officers on the staff. A veterinary officer is in control of each of the 17 abattoirs, and is responsible for the slaughter, the inspection and subsequent distribution of the meat to butchers in his area, and for the disposal of all by-products in the abattoir.

5. *The Cattle (Eire) Import Regulations.*—The importation of stock from Eire is under strict control and the veterinary staff is responsible for the proper working of all regulations.

6. *Laboratory Diagnosis and Research.*—There is a laboratory staff engaged in routine diagnostic work and in research into various animal diseases.

7. *The Examination and Purchase of Premium Horses.*—For the last few years the veterinary officers have been responsible for the purchase of premium horses, etc.

Briefly, it can be said that in Northern Ireland all veterinary work in connection with the Ministry of Agriculture is carried out in its entirety by a full-time staff. Part-time veterinary surgeons are not employed by the Ministry.

VI.—The Public Veterinary Services Overseas.

We make no apology for devoting an amount of space to the story of the development of the veterinary services overseas that would seem at this juncture to be wholly disproportionate to the actual numbers of our members that are employed in those services. In the first place, a portrayal of the history of those services must serve to widen the horizons of the large number whose vision has been narrowed down by the restrictions upon development in the more congested conditions prevailing in the home country. There, abroad, with the vast problems in livestock disease and in the livestock industry generally confronting him, the veterinarian has been able to give fuller rein to his capacity for enterprise within his profession. The achievement of the veterinarian, therefore, has been great in relation to the opportunities given him and often reads like real romance. Secondly, the opportunites for advancement there are still boundless, and by pondering awhile over the achievements of their forerunners abroad the newer generation may yet find the field they have sought for adventure and alluring employment. It must be the bounden duty of the Association to ensure that while consecrating their careers to those far away fields of enterprise the remuneration and conditions of employment are rendered attractive to them by exercising legitimate pressure on the proper authorities at home.

The magnitude of the overseas veterinary problem can only be appreciated when we realise that at the beginning of the present war the British Empire comprised almost one-quarter of the earth's surface, peopled by practically one-quarter of the world's population, of every race and creed, and representing a collection of separate entities, yet politically one unit.

From the 16th to the 18th centuries, discovery, cession, occupation and settlement brought about the acquisition of vast territories; the newly acquired possessions were frequently transferred to great trading companies, such as the Hudson Bay Company and the East India Company, for development. Incidental as these additions were to the conduct of great wars, though only a small part secured specifically by force, the wars over, the British Government was often requested to extend protection over backward peoples with confidence in British rule.

It is well now to recollect that the institution of veterinary education in this country, in 1791, was separated by only a few years from the loss to the Empire, by the treaty signed after the War of Independence with the American Colonies in 1783, of the territories which had represented the largest potential field for veterinary endeavour, with vast opportunities presented bearing in some ways the closest resemblance to those prevailing at home but on a grander scale. But for that fortuitous event in national history, which in the entirely changed political atmosphere prevailing half a century later would hardly have been allowed to arise, it is possible that the veterinary profession might have taken a very different trend of development, with the field that would have been otherwise immediately awaiting exploitation in the American Colonies. As it was, it came about that the public service which made demands beyond those of private practice, most insistently and most exclusively, on qualified members of the profession was the Army, and the restricted outlook so engendered, beneficent as it was undoubtedly from the standpoint of social uplift, deterred the ready development of that expansiveness of outlook which is natural to the educated veterinarian if his services had been otherwise demanded at the beginning of our professional history in a suitably far wider, and still remunerative, sphere. What happened in the way of veterinary pioneering, undertaken by an enlightened few, in spite of that handicap, is testified abundantly in the pages of this issue.

Notwithstanding the experience with the American Colonies, the treaties of peace made at the end of the Napoleonic wars involved many cessions of territory to Great Britain, the number of Colonies increasing from 26 in 1792 to 43 in 1816. "Colonies were then looked upon merely as having strategic value and providing possible opportunities for trade." It was, therefore, a long time before the mood of the public at home became aroused to a conception of duty towards the peoples abroad who had submitted themselves to British suzerainty. This is reflected by the notorious political incident during the discussion in Parliament of the Reform Bill of 1832, when a member (Hume) moved an amendment that the whole of the Colonies then in our possession should have 19 members in the Imperial Parliament, and his proposal was greeted with laughter. Nothing can be detected in the programmes of the veterinary schools at the time to exploit the opportunities presented by the enormous expansion of veterinary opportunites, and in view of the general mood of the people this is small wonder.

Yet, in spite of that, pioneers went abroad and were not slow to make a great impression. The very first Englishman who duly qualified at Lyons, in 1790, as a veterinarian, namely William Moorcroft (1767-1825), prospering exceedingly in private practice in London, was employed as consultant by the East India Company as early as 1795, and in 1808 proceeded to take charge of their stud and breeding operations in Bengal. "To a man of his ability the suppression of disease was a relatively simple matter; under his management the grave losses were in time reduced by 90 per cent., and the system of feeding improved by the introduction of oats, which, under Moorcroft's direction, were for the first time cultivated in India." "A man of great personality, masterful, determined, and of encyclopaedic knowledge," he bent his quest towards exploration, with a view to finding indigenous breeds of horses in Central Asia to improve the quality of the Indian stock and also to investigate sources of raw material for manufacturers at home and in India. He lost his life during one of these journeys in 1825. One of the major tragedies of the profession was that a man with these qualities did not view the prospects abroad a little differently and decide to remain in complete charge of the London Veterinary College after Sainbel's death in 1793, little foreseeing that the opportunity offered him at close hand was the nursing of a great profession in embryo, and believing rather that his spirit would find more adequate expression in a distant field. Men of his type, however, in the face of difficulties that would seem insurmountable to lesser men, were later to leave their mark indelibly upon great territories abroad, like J. H. B. Hallen in India; Andrew Smith and Duncan McEachran in America; Duncan Hutcheon in South Africa; Gilruth in New Zealand and Australia; Stordy and Montgomery in East Africa, and several others. In India the civil veterinary department was first manned by officers seconded from the Army Veterinary Services, and it was not until 1901 that a specially recruited civilian cadre was set up. It is interesting to recall that one of the first three men recruited to this cadre in India was Stewart Stockman, who soon afterwards took up appointment in the Transvaal and attracted Lord Milner's special notice as an organiser, at a time when cattle plague had just proved a great shock to agricultural prosperity and political stability in South Africa. Brought home in 1904 with the rich experience thus obtained in control of disease on a scale such as one does not ordinarily confront at home, the strengthening of the British veterinary services to grapple effectively with a major problem like foot-and-mouth disease was the handiwork of a man gifted like him who had already found exercise for his gifts where the processes of officialdom had had to be curbed to comply with his own will in carrying out his duties competently in the only way he knew they must be done, namely, in the way of a veterinarian.

The vast resources of Empire must therefore come to be looked upon as a selective training ground of proved advantage to the home country when it wants men capable of dealing masterfully with the larger veterinary problems.

The loss of what has been called "the first British Empire" by the secession of the American Colonies in 1783 has been gradually atoned therefore by the development of a new outlook towards our overseas possessions. This outlook has been traced back to the famous Durham Report of 1833*, recommending that the greatest possible measures of popular local political control should be given to each Colony. In succession, therefore, we have seen the four British Colonies of North America united, in 1867, under a federal union into a confederation known as the Dominion of Canada; the Commonwealth of Australia created, in 1900, by Imperial Statute; the Union of South Africa created in 1909, also by a Statute passed at Westminster; New Zealand, which had become a separate colony in 1841, eventually created a Dominion in 1907; Newfoundland which had representative government since 1832, created a Dominion during the last Great War; while in 1935 the Government of India Act provided for an All-India Federation, the Statute however being not yet in force. The Constitution, which came into force in 1937, of the Irish Free State (Eire) framed in 1922 establishes what is described as the "Sovereign independent democratic State of Ireland."

Delicate and complicated political considerations have, therefore, militated against attempts at an often much desired hegemony in a particular professional or technical field, like that of veterinary administration, throughout the Empire. Being small numerically and its work thought, often quite wrongly, not to be of major importance in the minds of the class of civil servants appointed to government departments under which the local veterinary services are placed for disciplinary control, the veterinary services have often had to suffer greatly from want of cohesion. Worst of all, the services until quite recently were usually placed under another technical department, usually the agricultural department, for administrative control.

How the veterinary services have fared in the several Dominions must, therefore, receive separate treatment in this number. The very difficult problem of dealing satisfactorily with all the other territories which are still in some degree subject to the control of the United Kingdom can be postponed until the reader has studied those accounts.

To solve the question of promoting some measure of maintaining communication with and harmonious relations between the various Dominions as well as between them and the Mother Country a series of expedients have been studied, which have resulted in important conferences, such as the Colonial Conference, held in London in 1887, the conference called by the Canadian Government at Ottawa in 1894, the Diamond Jubilee Conference of 1897, the King Edward VII Coronation Conference of 1902, and various subsidiary conferences, most important of which to us was the Conference on Education and Agricultural Research held in 1927. Resulting from this, the Imperial Agricultural Bureaux were constituted, one of which is the now firmly established Imperial Bureau of Animal Health. It would be difficult to exaggerate the importance of this event to anyone who is familiar with the feeling of extreme isolation in his work which was often felt by a veterinary investigator overseas before that bureau came into existence. Under Mr. Pool, as Deputy Director, the worker abroad has his own reports fairly summarised and well publicised, and the results obtained by workers elsewhere brought to his notice with the most commendable despatch, in the two publications, *Veterinary Bulletin* and *Index Veterinarius*, while a focal point for informal intercourse has been also successfully established.

The spread of contagious disease, it need hardly be said, does not respect political frontiers except in so far as geographical conditions also intervene or adequate preventive measures can be enforced to limit that spread. Hence, the experiences of States following such calamities as cattle plague (rinderpest) and foot-and-mouth disease show that international action in certain circumstances is highly desirable. It is pleasing to recollect that it was a British veterinarian, John Gamgee (1831-1894) who of his own initiative first realised that position, and it was at his instigation that the First International Veterinary Congress was held in Hamburg in 1863. An international organisation to which several States adhered was set up by means of a conference which met at Vienna in 1872. It was not until after the first Great War, however, that an effective organisation was brought into existence, largely through the inspiration of Professor Leclainche, in the shape of an *Office international des Epizooties*, with headquarters at Paris.

Training for the special problems of the Overseas Services may be said to have received impetus from the valuable work undertaken by the late Sir John M'Fadyean, in conducting his special post-graduate classes twice yearly from 1903 until the outbreak of the last war. By a Supplementary Charter of 1932, the Royal College of Veterinary Surgeons was authorised to confer a Diploma in Tropical Veterinary Medicine, which is awarded after examination in the subjects of (1) protozoology, helminthology, and entomology, and (2) pathology and bacteriology, animal husbandry, hygiene and epizootiology, and toxicology, to members of the College who have undergone a period of 20 weeks' special instruction. Unfortunately the comprehensive plan outlined by the Lovat Committee (1928) to provide a special school of post-graduate instruction with a subsidiary "feeder" station abroad has not been implemented, and in this respect we were therefore before the present war behind the French Government in providing facilities for overseas training. One salutary effect of the recommendations of that committee, however, was that a veterinary adviser was appointed to the Colonial Office (R. E. Montgomery). Unfortunately after his death a successor was not appointed for several years.

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(a) Veterinary Development in Canada

Veterinary development in Canada has been conditioned by the special circumstances of the country and by rather cumbersome legislation. Under the terms of the British North America Act each province is separately responsible for education, the term "education" having a rather wide meaning, and tending to include the licensing and regulation of the learned professions. As a result the Dominion Government cannot undertake these functions and uniformity of standards cannot be obtained.

The distribution of the population—the greatest density being in the east, while the centre and west are sparsely inhabited as a whole—the vast distances involved, together with the large French-speaking population in Quebec, have profoundly affected the manner n which the veterinary profession has grown.

* See an address by Viscount Bennett, "Empire Relations," given before the Royal Society of Arts, June 3rd, 1942.

Early in the 1860's fears were expressed that unless persons with veterinary knowledge were available in Canada, the well-being of the growing livestock industry might be jeopardised. As a result of Government action enquiries were made in the United Kingdom and Andrew Smith, a pupil of William Dick, of the Edinburgh Veterinary College, was induced to go to Canada. At first the idea was that he should give lectures of an elementary nature in an agricultural college, but it was soon realised that a more ambitious project was required. He was granted a private charter to open a veterinary college in Toronto, but no funds were provided and no legislation was available, or even contemplated, to safeguard the interests of the veterinarians when they graduated.

In 1864 Andrew Smith started the Toronto Veterinary College as a private school. His aim was to build up a prosperous institution to turn out men with a severely practical training after a rather brief course of study. The school prospered under these conditions, but the standard of education and of professional achievement of the graduates was low and the school did not create during the earlier years a body of professional men capable of gaining the confidence of the public. Many of the graduates proved to be men of outstanding ability, but a proportion were unable to attain anything like a professional standard.

Duncan McEachran, also a graduate of the Edinburgh School, joined Andrew Smith for a short time in 1865. He had very advanced ideas concerning the type of veterinarian that was required and soon planned the foundation of a new college to provide a really high standard of education.

In 1866 Duncan McEachran opened a veterinary college in Montreal. A sum of three hundred dollars was granted by the Legislative Assembly of Lower Canada, and this appears to have been the only financial assistance provided. In the following year a separate section of the college was formed with tuition in the French language for French-Canadian students. In 1875 McEachran built a new veterinary college at Montreal at his own expense. In 1889 his school, fulfilling his greatest ambition, was taken over by McGill University as the Faculty of Comparative Medicine and Veterinary Science. Its students took the basic science subjects along with the medical and science students and the vocational subjects were taught in the veterinary college. The handicap of competition with the Toronto college, where a cheap qualification could easily be obtained in a short time, was too great. The Montreal college never had a sufficiently large roll of students to assure prosperity and in 1902 it was closed. This fate can only be called a tragedy. The school produced fine men who have earned credit for themselves and for their country. McEachran was a man with ideas ahead of the times he lived in. He endeavoured, three-quarters of a century ago, to provide a standard of education and attainment that, when compared with that of the present day, would do credit to any profession.

Developments in veterinary education in the French language followed each other with great rapidity in the Province of Quebec during the last quarter of the nineteenth century. Duncan McEachran had engaged J. A. Couture and Orphyr Bruneau to undertake the teaching in the French section of his Montreal Veterinary College. In 1879 V. T. Daubigny took charge of this French course. In 1885 Orphyr Bruneau and V. T. Daubigny opened a new veterinary college for French-speaking students in Montreal, affiliated to Victoria University, Cobourg, Ontario, and the French section of McEachran's school closed. In 1886 V. T. Daubigny, with E. Lachapelle, a medical graduate, opened a School of Veterinary Medicine at Montreal, and in the same year J. A. Couture opened the Veterinary School of Quebec at Quebec, this being affiliated to Quebec University. In 1899 the three existing French veterinary schools in the Province of Quebec were consolidated under the name of the Montreal French Veterinary School. In 1895 the name of this school was changed to the School of Comparative Medicine and Veterinary Science of Montreal, the change being officially recognised by the Quebec legislature. In 1899 this school was placed under the auspices of the Agricultural Commission of Quebec. In 1928 the college was moved to La Trappe, on the Ottawa River, about 30 miles from Montreal.

In 1895 yet another veterinary school was opened—the Veterinary School, Queen's University, Kingston, Ontario. It closed down in 1899.

The Toronto Veterinary College was purchased from Andrew Smith by the Province of Ontario in 1908. In 1930 the college was moved to Guelph, Ontario, about 50 miles from Toronto. Thus from a rather humble beginning it has developed into the present well known college with its five-year course and veterinary degrees conferred by the University of Toronto.

So much for veterinary education. The multiplicity of institutions that arose and disappeared must be an indication of the needs and difficulties of the times, and of the natures of the men who fought to develop their profession.

The pioneer in the public health aspect of veterinary work in Canada was Duncan McEachran. Education was only one of his interests. He saw the need for strong Government veterinary departments and the danger to Canada if they were not developed in time. In 1884 he was appointed Chief Veterinary Inspector for Canada and held the post until 1902. During his term of office he drew up comprehensive Animal Disease Acts, and laid the foundation of the present Dominion Veterinary Service. In 1902 the name of the post was changed to Veterinary Director-General and the service became the Animal Health Branch of the Department of Agriculture. The Branch was composed of two divisions—the Contagious Diseases Division and the Pathological Division. In 1907 a third division, Meat Inspection, was added. In 1937 the whole Department of Agriculture was reorganised and six of the research divisions were taken away from their parent branches to form a "Science Service." The Pathological Division was thus taken away from the Health of Animals Branch and the latter was reduced to a division and placed under "Production Service" of the Department of Agriculture.

J. G. Rutherford succeeded McEachran and in 1912 he handed over his duties to F. Torrance who held the post until 1924 and was followed by George Hilton. In turn he was succeeded by A. E. Cameron. The head of the department is now Mr. M. Barker.

The Division of Animal Pathology, Science Service, has its headquarters at Hull, Quebec, just on the other side of the Ottawa River from the Dominion capital. Its institute is very modern and well equipped. Its head is the Dominion Animal Pathologist, Dr. Chas. A. Mitchell. Three branch laboratories operate under this division, at Saanichton, British Columbia (Officer-in-charge, E. A. Bruce), at Lethbridge, Alberta (J. A. Benkier), and the Poultry Pathology Laboratory, Ottawa (C. H. Weaver).

At Macdonald College, Quebec, is the Institute of Parasitology, of which the Director is Dr. T. W. M. Cameron.

The work of the Provincial Veterinary Departments is less well known. Each province is responsible for its own veterinary service, under its own legislature. Some are more developed than others. Standards of veterinary qualification are not uniform throughout the provinces. In certain of them the standards are high, but not in all. Where they are low veterinarians with inferior training can operate.

An outstanding event in Canadian veterinary affairs was the occurrence of "cornstalk disease" in cattle in the closing years of the last century, which was held by authorities in the United Kingdom and on the Continent to be bovine contagious pleuro-pneumonia. As a result of this diagnosis the importation of cattle from Canada to the United Kingdom was prohibited, and this embargo lasted for 35 years, until 1923. There is no doubt now that the disease was not bovine contagious pleuro-pneumonia and the action taken reflects little credit on those who were responsible for the embargo on Canadian cattle. McEachran upheld the view that the diagnosis was wrong and history has proved that he was right.

Canada is singularly fortunate in her freedom from certain major epizootic diseases and can thank her veterinarians for this blessing. There has been ample opportunity for some of the more serious infective diseases to be introduced and it is not just by good fortune that they have been kept out. The country is free from bovine contagious pleuro-pneumonia, foot-and-mouth disease and sheep-pox. Glanders is rarely encountered. Rabies occurs only sporadically; the difficulties regarding this disease are enhanced by the enormous area of undeveloped country, the use of dogs as draught animals in the snow-bound territories and the range of susceptible wild animals that exists. Dourine was eradicated some years ago and as a result the department, and particularly the late E. A. Watson, Dominion Veterinary Pathologist, who was responsible for the detection of infected animals by the complement-fixation test, acquired a high reputation. During recent years the serious horse plague, equine encephalomyelitis, has been prevalent in certain areas. This disease is especially serious because the virus which is its cause is also infective for human beings, and human cases of this infection occur in Canada. The development of the important fur-bearing animal industry has brought its own problems: encephalitis in foxes is one of them. The work of the department on the control of bovine tuberculosis and contagious abortion has been on very progressive lines.

Mention can be made of only a few of those responsible for building up the profession. First place must be given to Andrew Smith. He started the first veterinary college and built it up, until the State was able ultimately to take it over as a well established, prosperous and honoured institution. He did not aim at making a highly scientific profession. His bent was the craftsmanship of the work and he was able to attract great support for his school. He has been criticised for not ensuring teaching of a more academic type, and it is easy to support that view. A man who, in the circumstances of the times in which he lived, could maintain a private, flourishing school over a very long span of years, without a break, entirely by his personal labours, who could number his students by thousands, and retire full of esteem and influence, must have been a very great man.

The real giant in Canadian veterinary life was Duncan McEachran. He was satisfied with nothing but the best. He established a veterinary school of the finest type and produced graduates who have been ornaments to their profession.

The failure of his Montreal school to maintain itself was no fault of his. Its end can only be described as a glorious failure. McEachran was a "Pathfinder" if ever there was one. His "markers" showed the target and they are still being used by his successors in their "follow-up" of his trail.

Education was only one of McEachran's main interests. He was a pioneer in veterinary public health work. His teaching and advocacy led to the development of the Dominion Animal Health and Animal Pathology Divisions, now responsible for Canadian veterinary affairs. Duncan McEachran was truly a great Canadian.

French-Canadians have shown tremendous drive. The manner in which new veterinary colleges for French-speaking graduates appeared at one stage is almost startling. From the time McEachran opened the French section of his Montreal college instruction in French has persisted without a break, and it is important to note that connection with universities has been a notable feature in this enterprise. V. T. Daubigny, Orphyr Bruneau and J. A. Couture all shared in the work of providing veterinary education for French-Canadians.

A pause must be made here to pay tribute to one who, a member of the sister profession, was a great friend and supporter of veterinarians—the late Sir William Osler. As an undergraduate he came to Montreal with a letter of introduction to Duncan McEachran, who quickly recognised his great ability. The two became firm friends and, as the years passed, worked together whole-heartedly for an integration of medicine. Both had high ideals, a broad outlook, and a realisation of what science could offer to the control of disease. Osler was an influential supporter of the Montreal Veterinary College and it received a dire blow when, in 1885, his advancement took him to the United States. It was largely through his influence that the school was made a faculty of the University. His interest in and work on some animal disease problems is recorded in the annals of medicine and does not require mention here. The veterinary profession must express its gratitude to one of the greatest friends it has ever had.

Of the laboratory workers Charles H. Higgins was one of the earliest. Seymour Hadwen, a McGill graduate, has made important contributions. His work with the late Professor G. H. F. Nuttall on the use of trypan blue for the treatment of canine piroplasmosis is a cornerstone in chemotherapy. He was until recently on the staff of the Ontario Research Foundation, Toronto. The late E. A. Watson, Dominion Veterinary Pathologist, is best known for his work on the complement-fixation test for dourine and the control of that disease in Canada, but he has ranged over wide fields and done much that will be remembered, including the building up of what is now the important institute at Hull, Quebec.

R. Gwatkin, also of the Ontario Research Foundation, is another whose name must be included, also Chas. A. Mitchell, now the Dominion Animal Pathologist.

In education the name of C. D. McGilvray has a long and outstanding record as head of the Ontario Veterinary College, which has developed out of all recognition since the school was taken over by the provincial Government from Andrew Smith. F. W. Schofield and R. A. McIntosh, both on the staff of that College, are well known.

Finally, there are the men who were responsible for the field control of disease. Duncan McEachran must again be mentioned as the pioneer.

The history of Canadian veterinary affairs is not sufficiently known in Great Britain. Canada has succeeded to a greater extent than is realised in developing a livestock industry based on the possession of healthy animals. Her export trade in animal products has done much to provide food for other countries. In the present war this great source of food has been a key asset that has contributed to the success of allied strategy.

There are veterinary societies in Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Manitoba, Alberta and British Columbia, and in Ontario there are four—the Ontario Veterinary Association, the Central Canada Veterinary Association, the Western Ontario Veterinary Association and the Ottawa Society of Comparative Medicine. A Dominion Veterinary Medical Council was formed in 1944 as the result of a meeting of representatives of most of the provincial veterinary societies, and this Council will presumably act as spokesman for the various associations when dealing with public bodies and others.

To all who have contributed to the prosperity of Canadian veterinary medicine the present generation owes a deep debt of gratitude. If the Canadian Army Veterinary Corps had not been disbanded as the result of the policy of mechanisation, Canadian veterinarians would have been in the European theatre of operations along with their magnificent troops, and we regret that there has not been an opportunity to welcome them over here.

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(b) The Veterinary Profession in South Africa

In the story of the history and present state of the profession in South Africa, veterinarians in Great Britain may find cause for considerable pride—and also food for much sober reflection. In a comparatively short space of time the profession has established a very strong position in that country, playing its full part in the life of the community and receiving full public recognition of the value of its services.

The veterinary pioneers in South Africa had many and serious difficulties to face, for they were soon confronted by a medley of diseases which included many conditions of which they knew nothing whatever, and sometimes more familiar diseases in unfamiliar guise. The farmers of the country, and particularly the Boer farmers who had been there for several generations, had from painful experience acquired a great deal of practical knowledge; their theoretical knowledge may have been less than scanty and their interpretations of facts wide of the mark, but they knew a lot of facts which were unknown to the newcomer from Europe, whatever his training. Within limits, they knew what to expect, and when and where to expect it, and in a number of instances they had evolved preventive methods which were sound and fairly effective. In the course of time trained veterinarians acquired this farmers' lore and were able to use it as a valuable basis for scientific experimentation, but to the pioneer veterinary surgeon it must often have been a serious embarrassment. It is not surprising, therefore, that the earliest pioneers found no great demand for their services and some had even to follow other occupations until they found an opportunity of proving their true worth; for example, Arnold Theiler in the Transvaal found agricultural work, and Charles Gray, in Southern Rhodesia, worked as a telegraphist. The patient work and integrity of these pioneers slowly but surely won the confidence of the farmers, however, and some spectacular epizootics did much to stimulate the interest of the various South African Governments and led them to make official appointments. In this way the redwater invasion of 1870, the rinderpest epizootic in 1896-97 and again during the Boer War, and the introduction of East Coast fever during that war, all did much to encourage the development of the Government veterinary services. It should also be said that the cause of veterinary science in South Africa owes much to the encouragement of some broad-minded and enlightened rulers.

The first qualified veterinarians to visit South Africa were a series of men in the service of the army, headed by T. Burrowes, who qualified in London in 1799 and arrived in South Africa later in the same year. Curson has pointed out that of the 45 veterinarians known to have been in the country up to March, 1881, no less than 36 were army veterinary surgeons and three of the remainder were attached to the Cape Mounted Rifles. The first private practitioner appears to have been James Winter (R.V.C., 1836), who was in Natal in 1873 and was appointed by the Government in that year to be a member of the Natal Redwater Commission. In 1874 the first official whole-time appointment was made, and S. Wiltshire (R.V.C., 1872) became Colonial Veterinary Surgeon of Natal. Two years later W. C. Branford (R.V.C., 1857), who had taught anatomy at the Dick College, was given a similar appointment at the Cape, and he was succeeded in 1880 by Duncan Hutcheon (R. (Dick) V.C., 1871). Arnold Theiler, a Swiss graduate, arrived in the Transvaal in 1891. From the time of these pioneers the story is one of steady progress, widening knowledge of the diseases peculiar to the country, and of tropical diseases in general, and the gaining of the confidence of both farmers and Governments. Progress may often have seemed slow, except when stimulated to rapid and even spectacular strides by the great epizootics, but it was always real and soundly based. The field services became constantly stronger and larger, although they were never very large in relation to the great size of the country and the complexity of its problems, and laboratory services were added. The first laboratory was established by the Cape Government at Grahamstown and placed in the charge of Eddington, a medical graduate, who was later succeeded by W. Robertson (R.V.C., 1893). In due course a laboratory was established in Natal, under the charge of H. Watkins-Pitchford (R.V.C., 1889), and the South African Republic (Transvaal) installed Arnold Theiler in a small laboratory at Daspoort, near Pretoria; after the Boer War laboratory facilities were also provided in the Orange Free State, where H. K. Roberts (R.V.C., 1903) was Government Veterinary Bacteriologist. The laboratories were at first of very modest size and in some cases poorly equipped, but they soon proved their

value and well earned the more generous support that (to the great credit of the administrative authorities) they later received. For many years now, there have been small but good and well-equipped laboratories at Pietermaritzburg and Grahamstown, and at Onderstepoort, near Pretoria, a veterinary research institute, with an international reputation, which for size, equipment and facilities cannot be matched elsewhere in the British Empire—if, indeed, in the world.

The veterinary profession in South Africa could not have attained its present strong position without the skilled and conscientious work of many men, but a large share of the credit must be given to the brilliant work and wise leadership of certain outstanding individuals. One of the first and greatest of these men was certainly Duncan Hutcheon, who combined the qualities of a first-class veterinary surgeon with those of a wise and tactful administrator. He was an accurate and shrewd observer, and he recorded his observations; his official annual reports from 1880 onwards are a veritable gold-mine of information concerning the many diseases that he encountered. He won the respect and, indeed, the affection of the farming community, and he certainly had the confidence of his Government. After a long and successful career as chief of the Cape veterinary service, which grew and developed greatly under his guidance, he was, at the time of his death, Secretary for Agriculture of Cape Colony. Stewart Stockman spent only a short time in South Africa but at a very important juncture, and he was responsible for commencing the organisation of a veterinary service in the Transvaal at the end of the Boer War. He was succeeded by Charles Gray who, after facing great initial difficulties, had won the confidence of public and Government in Rhodesia and established a veterinary service there. In the Transvaal Gray built up a very strong field division and in 1910 he became the first P.V.O. of the newly constituted Union of South Africa, and was able to exercise his powers of organisation and leadership in a still wider field. It must be said, however, that although the profession owes much of its present strength and influence in South Africa to wise administration and competent execution, it owes still more, and much more, to research that has been both patient and inspired. That research has placed in the hands of the executive branch the weapons without which it would have been powerless to attack many of its most serious problems—or even to recognise them.

Among the outstanding contributions on the research side, mention must be made of the work of Watkins-Pitchford on the short-interval dipping of cattle, for it would be difficult to exaggerate the importance of this work for South Africa and for all warm countries in which tick-transmitted disease is a serious potential menace. Above all, however, South Africa, and tropical veterinary science, owes an incalculable debt to the work of Arnold Theiler. Theiler possessed untiring energy and great determination; in everything that he undertook he was extremely painstaking and showed a truly German thoroughness. But he also had a lively imagination and a fresh outlook, and he refused to be limited by accepted views or traditional methods when these conflicted with his own experience or his exploratory hypotheses. From the time of his arrival in the country he was fascinated by the strange medley of unknown diseases which confronted him, and even before he could find any employment in his own profession he was busily laying the foundations of that vast knowledge which he afterwards acquired, missing no opportunity of hearing farmers' experiences and making autopsies. In the end he gained the full confidence of the Republican Government and was given a small laboratory at Daspoort, but almost immediately the outbreak of the Boer War stopped further developments. Before that war drew to a close, however, he was again busily engaged at the laboratory, working under the British authorities. After the war, so fully had he won the confidence of the new administration (which was brilliantly organised by " Milner's young men ") that his Daspoort laboratory and its staff received various additions and finally funds were provided for the commencement of a much larger and better laboratory on a healthier site. At this juncture the Crown Colony Administration was replaced by a responsible Government and, while it is a tribute to Theiler, it is also to the everlasting credit of Generals Botha and Smuts, and a tribute to their sagacity, that they not only continued but extended and increased the support to the new institution. It was in this way that, as early as 1908, the Transvaal came to possess, at Onderstepoort, a veterinary research institute which could challenge comparison with any to be found in the world.

The work of Arnold Theiler, and that of his assistants, inspired or encouraged by him, could not be even superficially discussed in the space at our disposal, but his own reputation and that of his institution at Onderstepoort are now world-wide. It may certainly be said that the investigations of Theiler (in particular) and others in South Africa, and the sound application of their results, enabled the great epizootic diseases to be brought under firm control or eradicated, and successful attacks to be made on many of the less spectacular but ultimately almost equally destructive conditions. The value of the veterinary services in South Africa could need no better proof than the size of the healthy animal populations which are to be found to-day in many districts that formerly carried only a sparse population, usually of poor type, but perhaps it is demonstrated even more clearly by the improvement in the type of stock kept, for any great improvement of this kind is impossible without a reasonable measure of security.

The last great development, a natural result of the growing strength and reputation of the profession in the country, was the establishment in 1920 of a Veterinary Faculty in the University of South Africa (now a faculty of the University of Pretoria). The pre-clinical part of the five-year course could be taken at the Transvaal University College or the Witwatersrand University, and the clinical years were to be spent at Onderstepoort. In this way the new centre of veterinary education contrived to combine the advantages of university education, with its free association of students of many types and diverse interests, and the full use of the rich technical resources of a very large and active research centre. Graduates of this new school have given ample evidence of their high quality, and they are now playing a worthy part in all branches of the profession.

In the past, South Africa naturally and wisely welcomed the aid of able individuals from many different centres of training, and the Onderstepoort staff, *e.g.*, has had representatives of the veterinary schools of Switzerland (including Theiler, Frei and K. F. Meyer), Holland, Italy and Germany (including the present Director, P. J. du Toit). In the future, nearly all of the workers in all fields will naturally be South African graduates. But in the past the great majority of the veterinarians have been graduates of the British schools, and they still constitute a very considerable proportion of the research and field workers and of the senior teachers in the Faculty.

Dr. P. R. Viljoen (R.V.C., 1912), a veterinarian with a flair for administration, was for some years Secretary for Agriculture and Forestry in the Union, a situation that might well cause surprise in some more hidebound countries. Recently he has been appointed High Commissioner for South Africa in Canada. Dr. P. J. du Toit is Director of Veterinary Services and Animal Industry, and has under his command, not only the very large research service which is mainly centred at Onderstepoort, but also a large and well organised field veterinary service and other services connected with the stock industry. The veterinary school at Pretoria is now firmly established. There is every sign that high standards are being maintained in both research and its application to practice, and the South African veterinarian can feel proud of the present position and confident of the future. Untrammelled by the conventions—or prejudices—that bind and discourage, and free to build up traditions that inspire and sustain, the veterinary profession in South Africa has had the opportunity of working out its own destiny, and under able leadership it has grasped that opportunity. Veterinarians in this country may derive real satisfaction from the fact that so many members of the Royal College have been associated with its achievements, and that a considerable number are still playing an important part.

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(c) Development and Achievements of the British India Civil Veterinary Services

Agriculture is the main industry of India and 90 per cent. of the population of over 350 million persons live on agriculture. The figures for the livestock and its output are colossal. The annual value of the livestock industry is a good deal more than half of that of the whole of the agriculture of the country. It is estimated that there are 690 million cattle in the world (domestic buffaloes here being classed as cattle) and very nearly one-third of them are in India, the figures being over 162 million cattle and over 47 million buffaloes. Two-thirds of the domestic buffaloes in the world are in India. These all-India figures are important in discussion of the veterinary service of British India because the Indian States are such a large proportion of the whole of India, and because they are so widely dispersed throughout the whole country. The figures for the domestic animals in British India are 115 million cattle, 32 million buffaloes (altogether 147 million cattle), three million equines, half a million camels, 29 million sheep and 39 million goats. It is estimated that there are 61 million poultry.

The total annual cash value of the cattle industry of India as a whole was recently stated to be £459 million for cattle labour in agriculture, £121 million for cattle labour for purposes other than agriculture, £607 million for dairy products, £202 million for manures from livestock, £34 million for such products as hides, skins, bones, etc., and a quarter of a million pounds for the export of living animals. This makes a total of £1,423 million.

The horse is used only for riding and light draught work. It is never used for the plough and there are no heavy breeds. Most of the haulage is done by cattle. Trotting bullocks are used to some extent for drawing passenger vehicles either in single yoke or working as a pair. Buffaloes are used to some extent for slow heavy haulage. The Royal Commission on Agriculture in India (1928) put the position of the cattle as follows: "In no country in the world are cattle of more importance than they are in India. Milk, though important, is a secondary consideration. The primary function of the cattle is as draught animals for the plough or the cart. Without the ox no cultivation would be possible: without the ox no produce could be transported."

Pack animals are used fairly extensively, mules to some extent, camels in parts of the country and bullocks in some areas. Donkeys, of very poor grade, are used in certain light-load pack work, where they can be handled in droves, such as for moving materials for building operations; to a small extent they are used by poor people for carrying loads.

The general demand for meat is negligible as the bulk of the population are vegetarians and because many who are not cannot afford to buy meat. The absence of a market for slaughter cattle is a disadvantage and, together with the objection of the Hindu to the taking of life, hinders operations for the improvement of breeds and accentuates the difficulties of fodder supply, because worthless animals are allowed to survive.

While the milking capacity of the cattle is generally ignored in the breeding programme because of the paramount need to produce draught animals, there are breeds which are of good milking quality, when properly managed and fed. The buffalo is more popular than the cow for milk production. Especially if the milk is used for ghee production, it requires high feeding and Europeans have tended to discredit its value as a dairy animal. Milch goats are numerous everywhere, and are the "poor man's cow."

A large proportion of Indians are Hindus and their religion requires them to hold particular views concerning the relation of livestock to human affairs. The killing of animals is repugnant to them from the religious point of view and the cow is a sacred animal.

Scavenging animals form part of the economy of the country. Pariah dogs prowl in every bazaar. Vultures are ubiquitous; so are other carrion birds. Jackals slink around habitations at night. Sacred bulls wander at will unchecked, even among the food stalls in the bazaars. Monkeys exist in multitudes and are more than tolerated around the villages. Game animals are very numerous and even roam over agricultural land, and must frequently be responsible for the spread of disease. All these factors, together with good communications which encourage travelling, with sacred places to which enormous numbers of pilgrims migrate periodically every year, and with a complete absence of fenced boundaries to farm land, inevitably provide major opportunities for contagious disease of animals to spread. Serious enzootic diseases abound—rinderpest, foot-and-mouth disease, surra, etc.

Government policy is to administer the country by the imposition of laws that are consonant with the religious customs and beliefs of the people. As a consequence the veterinary department has to devise means for the control of disease that conform to the usages of the country. There are no comprehensive laws permitting the limitation of movement or slaughter of cattle when necessary for the control of disease. The police force, although well organised and efficient, has not legal authority to undertake cattle disease control measures such as are enforced in other countries.

Libya has been described as a tactician's paradise, but a quartermaster's nightmare. India might be described as a naturalist's paradise but an epizootiologist's nightmare.

Losses from Disease.—In a country in which 90 per cent. of its 350 million people are engaged in agriculture, with a population density of 220 persons per square mile, which has nearly one-third of all the cattle in the world, and with the conditions that aid the spread of infection to which reference has already been made, diseases have inevitably spread and spread disastrously in the past. Further, epizootics commonly occur at critical periods; for example, a seasonal sowing or reaping of crops may be rendered impossible.

When discussing animal disease in India reference must be made to the inadequacy of the fodder supply, to the prevalence of overstocking which is such a serious problem and to the general climatic and other conditions that prevail over most of the sub-continent. The situation in these respects is most unsatisfactory. The need for fodder conservation and the provision of pasture land is not sufficiently realised by the people and the farm livestock are at the mercy of the seasons. There is also a further condition that exerts an adverse effect on the agricultural situation: cow dung is used as a fuel for domestic cooking and its manurial value for the land is lost. Many diseases are encouraged or accentuated by poverty, so these conditions in which overstocking and seasonal starvation are prevalent are a very serious handicap to animal industry.

Civil Veterinary Services in India.—The existing civil veterinary services in India can be said to have had their origin in 1850 when as a young man the late Colonel J. H. B. Hallen—one of Professor Dick's pupils—arrived in India as Staff Veterinary Surgeon under the East India Company.

As a result of the severe losses caused, a Cattle Plague (Rinderpest) Commission was appointed in 1868. It reported that nothing effective could be done to control the disease without a skilled agency to undertake the work and a complete scheme of operations. In 1881 a Department of Revenue and Agriculture in the Government of India was instituted and the setting up of the agency suggested by the Cattle Plague Commission was one of the first questions it was called upon to consider. Owing to financial stringency, however, it was not until 1890 that the Government of India was able to lay the foundation of a permanently organised all British-India Civil Veterinary Department. The post of Inspector-General was created and Colonel Hallen was promoted to that office.

In 1901 the British-Indian civil veterinary service was reorganised. The 17 army veterinary officers who elected to remain in civil employment were transferred permanently from the Army Veterinary Department, and recruitment from that source ceased. Civilian veterinarians were thereafter appointed by the Secretary of State for India to the Indian Civil Veterinary Department.

Following upon this reconstruction a civil veterinary department was organised in each province, the senior officers being drawn from the above all-British-India service.

Hallen opened the first veterinary school in India at Babugargh in 1877, aiming to produce graduates with a strictly limited training in clinical work. In 1882 this school was transferred to Lahore. In 1905 the Lahore school, now the Punjab Veterinary College, absorbed a veterinary school that had been opened at Ajmere. Other schools were opened at Bombay (1886), Calcutta (1898), Madras (1904), and Patna (1930). The courses of instruction at the colleges are in English. At the Calcutta, Bombay, Madras and Patna colleges the course of study covers three years. At Lahore the course covers four years. The Madras Veterinary College is affiliated to Madras University and a five-year B.Sc. (Veterinary) course can be taken. There is also a four-year diploma course. The colleges are well built, spacious and well, often magnificently, equipped. They have provided the Indian personnel for the Civil Veterinary Departments of the several provinces, for the Indian states that have organised veterinary services, and for the Indian Army. They have also supplied Burma and Malaya and certain other territories with veterinary graduates. A few Indian veterinary graduates have found employment in Africa. The extent to which Indians set up in private practice is negligible, such practices being almost confined to a very few large towns. The aim of the Indian veterinary graduate is almost without exception to obtain a post in the government service. Selected students can commonly obtain grants from local government or other organisations. A considerable proportion of the students is sent to the veterinary colleges by local government bodies of the several provinces, the fees being paid for them and maintenance and other expenses allowed. With the great diversities of religion, language and custom that prevail in each province in India, the provision of suitable veterinary services for the agriculturalists is a matter of some complexity and the admission of students into the colleges is to some extent so arranged that they come from the communities in proportion to the requirements in these respects. The Government has for many years sent selected students to veterinary colleges in the United Kingdom.

The latest reports received show that there were 855 students at the Indian veterinary colleges—138 in Bombay, 120 in Madras, 216 in Calcutta, 127 in Patna and 254 in Lahore.

In 1923 the Indian Civil Veterinary Department became the Indian Veterinary Service in accordance with a recommendation made by the Islington Public Service Commission in 1919, but in 1924 recruitment to this service ceased.

The only all-British-India veterinary cadres are the Indian Veterinary Service and that embodying certain officers recruited since 1924 in special appointments under the Government of India. The other veterinary services are "provincial" and are on a lower grade, their members being recruited especially for service in the province concerned. The grades of officers, however, are common to the several provincial services, and salaries and allowances are more or less standardised. Members of the Indian Veterinary Service are posted for duty to a provincial service or for service under the Government of India and are transferable from one province to another. The Imperial Veterinary Institute, Muktesar and Izatnagar, is a Government of India service.

The Civil Veterinary Department of the Punjab soon developed a reputation for progress and the present organisation of that department is a monument to the ability of its officers and staff, with its budget of over £211,000 for 1939-40, its staff of 521 veterinary graduates, apart from office and other non-veterinary staff, its 318

well-equipped veterinary hospitals with accommodation for in-patients, and with its 1,224 veterinary dispensaries. In that year 2,074,627 animals were treated in the hospitals and dispensaries of the Punjab and 423,502 were treated on tour; 653,574 animals were castrated. These figures are given as examples of the activities of a provincial department. The other provincial departments are all exceedingly active and most of them have developed phases of activity special to their areas and according to the local conditions and the outlook of the staff.

Breeding has been a major subject in the programme of most of the provincial Civil Veterinary Departments. In certain provinces the departments have breeding farms for the supply of approved sires. The Hissar cattle farm in the Punjab, which is run by the Civil Veterinary Department, is a huge undertaking. It has upwards of 10,000 animals, nearly three-quarters of which are cattle and one-quarter sheep. Donkey stallions are issued for use in mule breeding. A cross-bred Merino breed called the "Hissar Dale" has been developed and found suitable for crossing with certain Indian breeds of sheep.

According to the latest available figures the total budgets of the several Provinces, excluding Bengal, for which no figure is available, amount to £540,080. If the budget for the Imperial Institute for Veterinary Research, Muktesar and Bareilly (£57,347), is added the total is £597,427. It is not possible to give total figures for the expenditure of the Imperial Council of Agricultural Research.

There are over 2,000 veterinary hospitals and dispensaries distributed over the several Provinces. According to the recent figures 4,689,190 animals were treated during the year in the hospitals and dispensaries and 2,260,776 were treated by the staff when on tour in the villages. 1,329,987 animals were castrated. These figures show that veterinary work is very active and they cover all the Provinces. Figures could be given for the number of doses of sera and vaccines administered in dealing with enzootic and epizootic disease, but the value of the work done in this direction can be assessed better by consideration of the extent to which such diseases are kept in control. The major contagious disease is rinderpest. Its ravages in the past have been enormous and the stepping stones that have been laid down in the course of the development of the veterinary departments have mostly been on a foundation provided by government action due to the recommendations of committees and commissions appointed to find means to prevent the enormous losses it has caused. For the first two decades of the present century a rather inactive policy was advocated and little but serum-alone rinderpest immunisation was practised, an attempt being made to ensure the development of active immunity by encouraging the mixing of the infected and inoculated animals at the scene of an outbreak. This method did not lead to effective control of the disease. Eventually the elaboration of the goat-adapted rinderpest virus by Edwards provided a great advance over any other method available, and during the last decade and a half active immunisation with the "goat virus" has been used on a large scale with excellent results. Rinderpest is now beginning to take a backward place in the animal disease setting.

Haemorrhagic septicaemia is a very important disease of cattle and buffaloes. It is dealt with successfully by routine seasonal preventive vaccination. The position with regard to blackleg is similar to that in other countries; the animals in endemic areas are vaccinated. Anthrax is not given as much prominence in the reports of the veterinary departments as might be expected. It is, however, an important disease in India. Good results are obtained from the use of a vaccine. Tuberculosis is a relatively minor cattle disease problem. Johne's disease occurs and is being dealt with. Glanders and equine abortion due to *Salmonella abortus equi* infection are important diseases in India to which the veterinary staff have devoted considerable attention. The control of poultry diseases is an important function in some areas. Helminth infestation, as in other countries, is a serious cause of loss and is actively dealt with. Rabies is always to the fore. Owing to the conditions in the country there is little likelihood that it can be controlled. Pariah dogs are encouraged everywhere; jackals live in close proximity to inhabited areas and are very numerous. Foxes are common. Steps are taken to diagnose cases when suspicion arises, particularly when a human being may have been exposed to infection, in order that a decision may be made concerning the need for the person to be given the Pasteur treatment.

A Royal Commission on Agriculture in India, the chairman of which was recently Viceroy of India, Lord Linlithgow, issued its report in 1928. It recommended that for the staffing of the veterinary departments of British India there should be 300 veterinary officers in the higher grade and 6,000 in the lower grades. It recommended that there should be one senior officer in charge of each district (there are about 200 districts in British India) which on an average would each have about 600,000 cattle in addition to other stock within its area. The Commission also recommended that there should be one assistant veterinary surgeon per 25,000 cattle. According to the last reports received the numbers were 133 and 1,902, so a great deal will have to be done to bring the strength up to that which was recommended 18 years ago.

On the recommendation of the Royal Commission an Imperial Council of Agricultural Research was instituted in 1929. It is divided into an animal husbandry and animal health wing, the head of which is the Animal Husbandry Commissioner, and a crops and soils wing. This council advises on scientific and technical work and makes grants for research, and the heads of all provincial agricultural and veterinary departments are on the advisory board of the council. The Ministers of Agriculture of all the provinces are on the governing body of the council.

The leadership of the Indian Veterinary Service has been a source of great anxiety. It had an Inspector-General until 1912, when at a time of financial stringency the post was abolished, as a measure of economy, along with certain senior posts in other departments. Thereafter for 20 years the Indian Civil Veterinary Department was without an effective leader. Certain of the duties of the Inspector-General were handed over in 1912 to the Agricultural Adviser to the Government of India, a technical agricultural officer with no training in veterinary affairs, and the Imperial Bacteriological Laboratory, Mukteswar, now the Imperial Institute of Veterinary Research, Mukteswar and Izatnagar, was placed under his administrative charge.

In 1930 the post of Animal Husbandry Expert to the Government of India was instituted and Colonel, now Sir Arthur, Olver was appointed, and again a veterinarian was at the head of affairs, but not with the authority of an Inspector-General. Mr. F. Ware, C.I.E., succeeded to the appointment which has since been changed to that of Animal Husbandry Commissioner, and last year, on his retirement, he was succeeded by Major G. Williamson, O.B.E.

What would happen if an officer without veterinary qualifications were to be appointed Animal Husbandry Commissioner is not clear. The position in certain respects is unsatisfactory.

The Imperial Veterinary Research Institute, Mukteswar and Izatnagar.—In 1891 the appointment of Imperial Bacteriologist was created so that a laboratory could be developed to investigate means for the control of animal disease, and at first the laboratory was situated at Poona. It was soon recognised that the location was unsuitable and in 1896 a site in the Himalaya foothills at Mukteswar in the United Provinces was selected. Mukteswar is at an altitude of 7,500 feet and is rather inaccessible. It is 24 miles by bridle path from the nearest railway station, this involving a rise from 1,700 feet. There is no road to Mukteswar and everything has to be carried up or down by coolies or on pack animals.

The laboratory comprises an estate of 3,000 acres of mountainous land of mixed woodland with some grazing and a little arable land. It is a large institution with good laboratory accommodation in the main building, together with separate isolated laboratories for certain special work. There are dozens of large animal sheds arranged over a central area on the steep sides of the main hill, and a chain of isolation collecting sheds with exercise yards at points on the periphery of the estate. There is indoor accommodation for well over 1,000 large animals. Its equipment is on a truly magnificent scale. It is a small town in itself, with its own large power station, post office, dozens of beautiful houses for the staff, a social club and a hospital. The library is at least the second veterinary library in importance in the British Empire.

It was soon found necessary to have laboratory accommodation on the plains as an annexe to Mukteswar and within reasonably easy reach, and for many years a small laboratory at Bareilly was used for this purpose. A new site of mixed arable and pastoral land was found later at Izatnagar, quite close to Bareilly, and in recent years this itself has grown into a large institution. An area of 750 acres is under cultivation to supply the fodder for the laboratory.

For some years the large-scale serum production formerly undertaken at Mukteswar has been dealt with exclusively at Izatnagar, because of the greater facilities for transport and for the maintenance of large numbers of animals.

The annual issue of biological products is very large. Recent reports show that 28 different biological products, consisting of antisera, vaccines and diagnostic agents, were produced, the total number of doses being 2,947,649. The receipts for the products issued totalled £27,666. The expenditure of the Imperial Veterinary Research Institute, Mukteswar and Izatnagar, was £57,377.

In 1936 it was decided to enlarge the scope of the Izatnagar Institute by opening branches to deal with Animal Nutrition and Poultry Research, these being equipped at a cost of £48,750. A Genetics section is to be added.

The technical staff of the two institutes comprises 13 veterinarians —among whom are specialists in bacteriology, pathology, immunology, the preparation of sera and vaccines, helminthology and poultry diseases—six chemists, two entomologists, a physiologist and a protozoologist. There is a resident whole-time medical officer for

the staff at Mukteswar. The total staff, including clerks, laboratory assistants and others, and 781 daily labourers (coolies, animal attendants, etc.), comprises over 1,100 persons; excluding the labourers there is a staff of over 200 at Mukteswar and over 100 at Izatnagar.

Research.—Most of the veterinary research done in India has been carried out by the Mukteswar staff. The veterinary colleges have well-equipped laboratories for routine work and there are facilities for a good deal of research, but they have not been staffed for research. All the same, over the years a good deal of original work has been done. Examples are the investigation of Schistosomiasis of cattle, surveys of helminth infestations of India, the method of infection in haemorrhagic septicaemia and general work on dourine, at the Punjab Veterinary College, and on the etiology of bovine nasal granuloma and on pleuro-pneumonia of goats at the Madras Veterinary College. During recent years disease investigation officers have been posted in the provinces and useful results have been obtained.

A major discovery at Mukteswar has been the goat-adapted vaccine for immunisation against rinderpest. The published work on rinderpest would fill volumes and has covered every imaginable phase of the subject. It is impossible even to give an idea of its scope except in a very lengthy article. The same can be said of a very large variety of the diseases that have been dealt with. The " goat vaccine " has proved a great boon to India and, according to one senior officer of the service, it has " taken the sting out of rinderpest." Surra has been investigated by veterinarians in India ever since the trypanosome was discovered by Griffith Evans in 1880 at Dera Ghazi Khan in the Punjab, and classical publications have been produced on this disease. It is still an important subject in research programmes. Work at Mukteswar some years ago revealed that *Theileria mutans* is almost ubiquitous in Indian cattle. In ordinary circumstances it causes no obvious disturbance of health, but when the host becomes seriously ill from any cause very acute theileriasis can supervene. As found in India this organism shows a very close relationship to *T. parva*, the causal organism of " East Coast fever " in Africa.

Poultry diseases have been actively investigated at Mukteswar during recent years.

An important recent discovery is that a form of bovine contagious pleuro-pneumonia exists in Assam. It appears to be of a relatively benign type but is stated to be due to the classical virus.

Good work has been done during recent years on equine encephalomyelitis and it has been shown that a chronic paralytic disease that has been known for many years as " Kumri " is a later manifestation of the encephalomyelitis.

Helminthology has occupied the attention of veterinarians in India from early days and the names of the staff of the service are represented in the names of worm parasites that are well known. During recent years an active department has been built up at Mukteswar to deal with this subject and the worms that affect livestock in India have been described.

Biochemistry has been well represented in Indian veterinary research, though whole-time biochemists have not been continually on the Mukteswar staff until more recent years. Hartley's work on the constituents of the blood that contain the immune body of rinderpest serum carried out over 30 years ago is a classic.

Evans wrote a book on the elephant and its diseases over 30 years ago. Leese and Cross both wrote books on camel diseases,

The important text books and monographs are full of references to the work of members of the Indian Veterinary Service. Griffith Evans, Hallen, Lingard, Pease, Holmes and Edwards are names that will never be forgotten by veterinary historians. Hence, the contribution of the R.C.V.S. to the economic development and well-being of India has been truly an enormous one. Space, unfortunately, forbids us to deal even summarily with the contributions of the small band of veterinarians who have left their mark on the face of India.

Periodical Publications.—From 1906-12 a few enthusiastic members of the department produced a valuable quarterly journal, the *Journal of Tropical Veterinary Science*. It was abandoned at the time the post of director-general was abolished. For some years the research publications of the department were issued as memoirs or bulletins of the Government of India agricultural series of miscellaneous publications, and many important veterinary reports appeared in this series. After the post of Animal Husbandry Expert was created a new quarterly journal was introduced in 1931, the *Indian Journal of Veterinary Science and Animal Husbandry*. In the same year a bi-monthly journal was started, *Agriculture and Livestock in India*, and this often contains articles on veterinary subjects: the name of this journal was changed in 1940 to " *Indian Farming*."

The *Indian Veterinary Journal*, which has flourished for 18 years, is a private publication dealing mainly with the interests of the Indian veterinary staff in the executive field work.

(d) The Veterinary Services in New Zealand

Historical.—For all practical purposes the inauguration of a State Veterinary Service may be said to date from the appointment by the New Zealand Government in 1893 of the late Dr. J. A. Gilruth as Chief Veterinary Officer to the Department of Agriculture and the passing of the Slaughtering and Inspection Act in 1900. This act provided for the registration and licensing of all meat export, municipal and private slaughterhouses, and the establishment of public abattoirs in all towns with populations above two thousand, while the regulations under the act prescribed certain indispensable sanitary and hygienic requirements. The State Veterinary Service became responsible for its practical administration.

Up to the time of the passing of the Slaughtering and Inspection Act very few qualified veterinary surgeons were to be found in New Zealand; indeed little inducement existed, for at that time the profession had no legal status and the Colony provided a happy hunting ground for the quack and charlatan. The supervision of animal health under the Department of Agriculture was undertaken by experienced but unqualified officers designated Stock Inspectors. Gilruth's appointment and subsequent activities, particularly the framing of the Slaughtering and Inspection Act, brought about a great change in the department's policy. Under the act the services of a number of duly qualified veterinary surgeons became obligatory and their assistance was also required to help in the investigations into animal disease which Gilruth had initiated. Gilruth himself, during a visit to London early in 1900, selected most of the candidates for these posts—a by no means easy task in view of the fact that the South African war had absorbed for the time being so many of the younger graduates. Those engaged travelled out to New Zealand where they were received by the Acting Chief Veterinarian, Dr. C. J. Reakes, later Director-General of the Department, and assigned their various duties. For some years Gilruth and Reakes, with the help of two or three lay assistants, carried on routine and research work in Wellington in a laboratory and surroundings which it would be correct to describe as primitive. But at length the value of veterinary research having been acknowledged, a small, but efficiently equipped laboratory with some 200 acres of ground was in 1906 erected at Wallaceville, 19 miles north of Wellington. The surrounding land, cleared of gorse and boulders, planted and cultivated, grew in course of time into a pleasant park-like farm where livestock could be grazed and fattened and where suitable observation and holding paddocks were available. Here up to the time of his resignation and appointment as Principal of the Melbourne University Veterinary School, Gilruth and his assistants did much useful work which further endorsed the importance of veterinary research in a country at that time practically dependent upon its pastoral industry.

The vacancy caused by Gilruth's resignation was filled by Mr. H. A. Reid, F.R.C.V.S., who continued in charge of the laboratory until 1923. This laboratory, enlarged in 1924, has now been reconstructed. A large, main building has been erected and the old laboratory serves more as an annexe. These new premises, now known as the Animal Research Station, were opened in 1938. They include departments of biochemistry, dairy bacteriology, nutritional research, and of course veterinary pathology, bacteriology and parasitology, so that team work essential in modern methods of investigation can now be effectively pursued. A considerable amount of routine work, also diagnosis, and preparation of vaccines and serum are carried out. Since 1925 Dr. C. S. M. Hopkirk, D.V.Sc. (Melbourne) has had charge of this centre.

An Animal Research Division of the Department of Agriculture was set up in 1939 with Dr. J. F. Filmer, D.V.Sc. (Melbourne) as director and an associated staff working on the research side undertakes the investigation of animal disease, while at Ruakura Experimental Farm, near Hamilton, nutritional and allied problems are studied.

The growing strength of the profession numerically led to the formation of a Veterinary Association to which all registered members of the profession are eligible. This association holds annual general meetings at which papers are presented and discussed and progress in certain aspects of research explained. The New Zealand Veterinary Association has now been affiliated to the National Association of the Home Country.

Not until 1926 was the Veterinary Surgeons Act passed which gives to all duly qualified veterinary surgeons in New Zealand a legal status equivalent to that accorded to the profession in other parts of the world. Although veterinary surgeons holding foreign diplomas are not eligible for the civil service they may practice in the Dominion provided their credentials satisfy members of a Board set up under the act for that purpose. [Since foreign veterinary surgeons are dependent upon private practice their opportunities are limited.] Recently, on compassionate grounds, a few refugees from Europe who were able to satisfy the Board of their bona-fides and whose qualifications reached the necessary standard were allowed into the country to engage in private practice.

Veterinary Education.—At present no establishment exists in New Zealand for the training of veterinary surgeons, but in order to encourage young New Zealanders of suitable type to enter the profession the Government has within the past few years provided selected candidates with scholarships to the value of £100 per annum to enable them to undertake the necessary curriculum either at Sydney University or at any of the veterinary colleges in Great Britain. On graduating the beneficiaries are under an obligation to enter the service of the New Zealand Government and remain in it for a period of not less than five years.

A more recent development, particularly in districts devoted to intensive dairying, has been the organisation of "Veterinary Clubs." These clubs guarantee the salary of a local practitioner at the rate of £500 with annual increments of £50 to £700 (N.Z. currency). No superannuation attaches to these posts and practitioners are expected to provide their own surgical instruments.

Emoluments.—It may perhaps be of interest to state that the present scale of salaries paid to veterinary surgeons employed by the Government of New Zealand is at the rate of £470 to £615 (N.Z. currency). Specialists engaged in studying problems such as sterility, parasitology, etc., receive from £600 upwards. District Superintendents go to £715 and there are one or two other posts with salaries below the £900 mark.

The Stock Remedies Act.—An important measure aimed at safeguarding the interests of livestock owners, preventing cruelty to animals and perhaps to some extent protecting the veterinary profession from unfair competition came into force in 1934. Under the above act all proprietary remedies must be registered after approval of their formulae by a Board composed of veterinary surgeons and pharmacists. Only preparations which satisfy the Board that they possess some basis for the claims made about them are now allowed to be sold in the Dominion. The Board have also the right to modify or suppress all extravagant claims appearing in advertising matter regarding the remedy. This act, which deals a heavy blow at quack medicine vendors, has saved stock farmers immense sums which formerly they used to waste on worthless and sometimes harmful concoctions. It has also undoubtedly spared the animal population much misery and suffering caused by the application of drastic, painful treatments of little or no practical value.

Organisation.—The veterinary service of New Zealand forms an integral part of the Livestock Division of the Department of Agriculture, and on assuming control of the Division in 1909 Dr. C. J. Reakes, M.R.C.V.S., set about re-organising the service by giving the senior veterinarians greater administrative responsibility. To this end he apportioned the country into four areas—two in the North and two in the South Islands. To these areas or districts veterinary superintendents were appointed whose purely veterinary duties were now extended to embrace such agricultural problems as the registration and branding of flocks, the control of noxious weeds and rabbits, etc. Government veterinarians in these districts were, with the remainder of the lay stock inspector staff, brought under their jurisdiction. The present Director of the Live-stock Division is Mr. W. C. Barry, M.R.C.V.S., who has held the position since 1934. Here it may be mentioned that the animal population of the Dominion is made up approximately as follows: horses, 277,800; cattle, 4,389,000; swine, 802,419; sheep, 31,306,000. There are approximately 80 veterinarians in New Zealand. The majority of these are in the Government service, engaged in meat inspection in the export works and public abattoirs, while others are carrying out routine and specialised duties in the field. That leaves a very small margin available for attention to individual animals; moreover, veterinary surgeons employed by the Government may not practise in competition with private practitioners nor receive additional fees for their services. Private practice in New Zealand differs widely from that in Great Britain, for apart from thoroughbreds—racing is an important industry—and small animals in the towns, country districts owing to the comparatively low value of stock and the long distances to be traversed, do not offer the facilities met with elsewhere. The steady improvement taking place in the quality of the flocks and herds will before long, however, compel owners to seek professional aid earlier and more frequently than has hitherto been the case. The figures for the livestock population already quoted seem to justify the belief that more practitioners will be needed to reinforce the dozen or so available at present for the whole of the Dominion, and veterinary surgeons have in fact been recently appointed for service with the Government and farmers' organisations.

Control of Disease.—In the control of animal disease Government veterinary officers work under the authority of the Stock Act, 1908. Among the diseases scheduled under the Stock Act those known to exist in the Dominion are: actinomycosis, cancer, tuberculosis and variola and "also any tumour or growth which in the opinion of an inspector is of a malignant or recurrent nature, and such as to render unfit for human consumption the flesh or milk of the animal suffering therefrom." Animals found to be affected with any of these diseases may be condemned by an inspector (all Government veterinarians are inspectors under the act) and compensation paid to the owner according to their market value at the time of slaughter.

Progress in Recent Years.—Though remarkably free from contagious disease, particularly that of the epizootic type, New Zealand has many major problems to occupy the attention of its research workers. Tuberculosis, though not present to a serious extent—probably not more than 10 per cent. of bovines are affected and in some districts far less—has been studied from various angles. Johne's disease, though not widespread, causes concern in certain districts where it is now well established. In common with other countries, as pastoral industries become more intensive the incidence of disease increases proportionally. Mastitis is widespread and accounts for considerable economic loss. Abortion and infertility also exist to a serious degree. Although the country is free from swine fever and several other pig diseases prevalent elsewhere, the commonest and most serious bacterial factor affecting pigs is infection with *Salmonella suipestifer*; arthritis is very troublesome among the pig population. Blackleg occurs in certain districts of the North Island. In these areas control by vaccination proves very satisfactory. Tick infestation of cattle by the relatively harmless species *Haemaphysalis bispinosa* is also prevalent in the North Island and special measures of control have been organised.

In contrast with New Zealand's freedom from acute infectious diseases there are several interesting conditions to attract the research worker. Among these may be mentioned the so-called "Bush Disease" affecting ruminants depastured in definite areas of the volcanic zone of the North Island. It is a starvation disease originally thought to be due to deficiency of iron in an assimilable form but now known to depend upon a cobalt insufficiency. Other mineral deficiencies affect the skeletal tissues of cattle and sheep in districts short of available calcium, phosphorus or iodine—the latter giving rise to cretinism and its concomitants. Pulpy kidney affecting lambs has now been found to arise from an entero-toxaemia which can be controlled by appropriate vaccination. Facial eczema affecting sheep is another interesting condition due primarily to fibrosis of the liver followed by photosensitisation of the skin. Pregnancy toxaemia of ewes and *ante-partum* prolapse of the vagina are very troublesome at certain seasons. The somewhat humid climate of New Zealand encourages infestation with parasites of the stomach and bowels in all species. In the dog special precautions are taken against infestation by the tape-worm *Taenia echinococcus* and periodic dosing with arecoline hydrobromide is obligatory on the part of dog owners.

Among problems now under investigation by the Department of Agriculture the following should be mentioned: facial eczema, mastitis, cobalt assimilation and metabolism, grass staggers, mineral metabolism, blowfly and fluke investigations, fowl leucaemia, anaerobic infections, sterility in cattle and artificial insemination, cow pox, parasitism in sheep, pig diseases, deficiency diseases, bull fertility, poultry and pig feeding experiments, etc. Each subject of investigation is undertaken by a team of scientists possessing special qualifications and experience in that particular sphere and every fresh observation adds to the interest of the work in hand. Unfortunately the war may have seriously interrupted these studies and interfered with a continuance of the progress which had already been made.

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(e) Australia: Its Early History and Later Development.

(i) The Early History of the Veterinary Profession in Victoria*

These remarks are confined to the period anterior to 1908.

In the early days of its occupation by white people, Australia was not an attractive field for the veterinary surgeon. Domestic animals that had been imported, and their offspring, enjoyed a remarkable freedom, not only from those epizootic diseases which have caused such devastation amongst the flocks and herds of older countries, but also from ordinary sporadic ailments. This freedom may be attributed to care in the selection of sound, healthy animals for importation, the long and trying voyage which would eliminate the weak and unhealthy ones, the complete isolation from countries where animal diseases were prevalent, and extraordinary salubrity of the climate. Imported under such favourable conditions to a country pre-eminently adapted for their growth and reproduction and with a food supply and environment unsurpassed, it will be of interest to trace briefly the origin and spread of disease amongst domestic animals.

* From a paper read by W. T. Kendall, D.V.Sc., H.A.R.C.V.S., M.R.C.V.S., before the Australasian Association for the Advancement of Science, Melbourne Meeting, 1913, Vol. 14, Section K.

So long as the original natural conditions remained undisturbed domestic animals preserved their freedom from disease. They were allowed to roam freely over large areas of country, with every opportunity of choosing their own food, water and shelter. There was no loss of vigour from overcrowding and over-stocking, but, as they continued to breed and multiply out of all proportion to the limited requirements of the then small community, their value depreciated so much that stock-owners became careless about selecting and mating them. They neglected to castrate and weed out the inferior male animals and allowed males and females of all ages and relationships to run together to the certain deterioration of their offspring.

As time went on and the population began to increase, a higher state of domestication became inevitable. The larger holdings were fenced off into smaller ones, the liberty of the animals became more restricted, there was less choice in the matter of feed and water, etc. Seasons of scarcity occurred and checked the growth of the young animals and weakened the resisting powers of the mature ones against disease. Parasitic diseases became prevalent and caused heavy losses. Further, and perhaps less discriminate, importations took place, and the time occupied by the voyage became lessened. Scab was introduced amongst sheep from Tasmania. Outbreaks of malignant catarrh occurred in New South Wales as far back as 1834. In 1847, anthrax, then known as Cumberland disease, made its appearance on the Leppington estate, near Campbelltown, New South Wales, and in 1876 the first extensive outbreak occurred in Victoria. How or when the disease was first introduced is not known, but, when investigating the cause of an outbreak in a dairy herd near Geelong about the year 1898, I expressed the opinion that it had been introduced with bone meal which had been given to the cattle as a remedy for cripples. I took a sample of the meal to Dr. Cherry, then bacteriologist at the University of Melbourne, who confirmed my conjecture by making cultures of the anthrax bacilli from the meal. This meal was made from a shipment of bones that had arrived from India a short time before. Two other outbreaks occurred in the Dandenong district through using bone meal from the same source.

In 1858 contagious pleuro-pneumonia was imported by a cow which was diseased when landed, and died within six weeks, having in the meanwhile infected the herd of the importer. In 1870 an outbreak of foot-and-mouth disease occurred amongst cattle. Tuberculosis, tick fever, blackleg, and white scour, contagious abortion, epizootic ophthalmia in cattle, braxy, foot-rot and caseous adenitis in sheep, swine fever in pigs, strangles and influenza in horses have successively appeared, besides many other diseases.

Various indigenous diseases, due to dietetic and other causes, have also from time to time caused heavy losses, and since dairying and closer settlement have been introduced many, both enzootic and sporadic, diseases have become prevalent.

Pioneer Veterinary Surgeons.—The first veterinary surgeons to arrive in Australia were mostly men who, like others, had caught the gold fever, or were allured by prospects of successful stock-raising or wool-growing. A few no doubt came for health reasons.* With the exception of one or two in Sydney and Melbourne, who carried on a more or less precarious practice in connection with shoeing businesses, there were no veterinary surgeons practising except a few unqualified men.

Some, after trying their luck on the gold-fields, or in other occupations, either returned to their native land or wandered elsewhere. Among occupations which I have known qualified veterinary surgeons to be engaged in may be mentioned that of golddigger, squatter, farmer, pound-keeper, trooper, stud-groom, coachman, groom in a cab stable, labourer in a brick-yard, labourer in the cane-fields of Queensland, insurance agent, ship's doctor, police magistrate, chief commissioner of police, member of parliament, and a medical student at the university of Melbourne.

Yet, in spite of this, empiricism was rampant from a very early period. Every city shoeing forge was styled a "Veterinary Shoeing Forge." Cases that were not treated by a qualified veterinary surgeon or a farrier received rough and ready treatment at the hands of the owner or some officious neighbour or were allowed to "rip," if I may use an expression then in vogue. This "rip" treatment consisted in turning a sick or injured animal out to die or recover, as the case might be. The amount of cruelty inflicted both from commission and omission was truly lamentable. Animals were cheap and easily replaced; hence the neglect. A decent hack could be bought for from 10s. to £1. The only animals of value were stud animals, race-horses, and carriers' horses.

Down till 1880, when I arrived in Victoria, there were not more than a dozen qualified veterinary surgeons practising in the whole of Australia. There was not a single veterinary surgeon wholly employed in Government service in any of the States. It is true that veterinary surgeons inspected imported stock, and made occasional investigations into outbreaks of disease on behalf of the respective Governments. A few held honorary positions in the defence departments, and a certain amount of veterinary work was done for the Governments in connection with the police and postal departments, etc.

Amongst the early pioneer veterinarians the most familiar names are those of the Stewarts and Pottie, in Sydney; Shaw, Miscamble, Vincent, Mitchell, and Marsden, in Melbourne; Snowball, in Ballarat; Park, at Warrnambool; Rogerson, at Stawell; and Aked, at Bendigo; Chalwin, Bickford and Horton, Adelaide; and Irvine, Brisbane. Some of these had passed away, and others had not come on the scene at the time I mention. Of course, there were others who practised at various times for a short while in different places, but their names are less familiar, and they can hardly be regarded as pioneers. The former are, however, the names of men which deserve to be handed down to posterity. The fact that they stuck to their profession and outlived all kinds of difficulties, upheld its dignity in every way, and laid a solid foundation for those who had to follow entitles them to our respect and gratitude. It would have been a pleasing task to have given short biographical sketches of some of these worthies had space permitted, but that must be left to some future occasion.

Stock Departments.—In consequence of the outbreak of scab in sheep, which, for a time, seriously threatened the wool industry, Scab Acts were passed by the different colonial Governments, and staffs of lay inspectors appointed, and credit must be given to them for the efficient way they carried out their duties under local authorities, and succeeded in spite of great difficulties in stamping out the disease. Later, when other epizootic diseases, such as pleuro-pneumonia, anthrax, etc., began to appear, "Diseases in Stock Acts" were passed, and the scab inspectors became stock inspectors. They were, however, far too few in number and wanting in scientific training to cope with the spread of disease. As might have been expected, there was no systematic or continued effort to suppress or eradicate disease. The areas which they were expected to supervise were far too large, even if they had possessed the necessary scientific knowledge. Not only were heavy losses continually taking place from, to them, unmanageable diseases, but there was a total absence of supervision over meat and dairy produce.

Twenty-five per cent. of the cattle slaughtered for food at some of the suburban abattoirs were affected with tuberculosis while hydatids, fluke, cancer, and other diseases were quite common; and yet there was no inspection or any adequate restriction on diseased meat going into consumption. There was no veterinary inspection of dairy herds and milk, butter and cheese, the produce of diseased animals, was openly sold without let or hindrance. The infant mortality was appalling, and outbreaks of typhoid fever and other diseases were distinctly traceable to insanitary dairies.

* It is of interest to recollect that the late Professor William Williams, who was born in 1832, was descended from a line of highly respected North Wales farriers, and who was afterwards destined to play a distinguished part in British veterinary education, had migrated to Australia in his youth, "caught by the gold fever" and for health reasons, in 1852. After (like Cecil Rhodes) making a clinically complete recovery from tuberculosis he returned, qualifying from Dick's College in 1857, and succeeding to the Principalship of that college on Dick's death in 1866. After five years, however, disagreement with the Trustees caused him to open an independent "New" college in Edinburgh, which he controlled until his death in 1900, being then succeeded by his son, W. Owen Williams, who, on appointment in 1904, as Director of Studies to the newly created Veterinary School at Liverpool University, transferred virtually the New College, Edinburgh, to that University. (See *Vet. Rec.* 1900. Nov. 24.)

In somewhat a different sense, migration for health reasons in those early pioneering days to Australia caused, according to General Smith, the veterinary profession in Great Britain to lose for good one of its most promising exponents, John Stewart. After qualifying in Edinburgh in 1827, Stewart came to London and studied at Youatt's school and under Coleman. He then practised in Glasgow and was elected in 1833 Professor of Veterinary Surgery in the Andersonian University of that city. The pages of Stewart's booklet, entitled *Advice to Purchasers of Horses*, etc., first published in 1831, are, according to Smith, "worth printing in letters of gold." Other publications also stamp him as a man with rare powers of observation and fine judgment. "For reasons of health" he went to New South Wales in July, 1840, practised for many years in Sydney, and on several occasions acted as adviser to the Government in veterinary matters. He became an extensive landowner and took a great interest in politics, ultimately becoming a member of the Legislative Assembly, and dying in retirement at an advanced age. Writing of the splendid teacher on Dick's staff, who died young, John Barlow (1815-56), Smith says that as time went on after the establishment of the veterinary schools and the mid-19th century was reached there was no indication that veterinary surgeons were taking any higher position in the art, while of science they had better knowledge. "There had been a dearth of good men since the days of Blaine, Moorcroft, and Bracy Clark, a dearth mainly attributable to the wretched, mentally impoverished material with which Coleman filled our ranks. But for Youatt and W. Percivall, the period would be absolutely barren, for, good man as Dick undoubtedly was, he was more practical than scientific. . . ." (Smith's *Hist. Vet. Lit.* **4**. 108.) Of John Stewart, however, Smith's judgment was: "His emigration to Australia was to us his professional eclipse. It was very hard on our impoverished profession that one of its most able and original members should have been debarred by ill-health from professional work in this country while still in his prime. In Stewart, as will be seen from his work, we lost a great man." (Smith's *Hist. Vet. Lit.* **4**. 43.)

What, however, according to Smith's great authority, was Britain's loss must have been Australia's ultimate gain, and it is a satisfying thought, at this moment of our Centenary, to have this weighty testimony before us that the British veterinary profession transferred to Australia at a very early stage in the modern history of that great pastoral country one of its most promising sons—a transfer, or loss, we have now been made to realise, our profession at that time could ill-afford.

Government Veterinary Departments.—The first veterinary surgeon to receive a regular Government appointment was Mr. Anthony Willows, M.R.C.V.S., a fellow student of mine, who arrived in Sydney in 1883, and was appointed Veterinarian to the New South Wales Agricultural Department. He went to the Soudan War with the New South Wales Contingent, and died on the return voyage. Mr. Willows was succeeded by Mr. Edward Stanley, F.R.C.V.S., in 1885. Mr. Archibald Park, M.R.C.V.S., was retained by the Tasmanian Government to inspect imported stock, etc.; while Mr. Chalwin, Adelaide; Mr. Irvine, Brisbane; and Messrs. Vincent, Mitchell, Marsden, and myself were approved by the Governor in Council to inspect imported stock for Victoria. It was not, however, until 1897 that any regular public veterinary appointment in Victoria was made, when Mr. S. S. Cameron was appointed veterinary surgeon to the Board of Public Health. In 1905 he was transferred to the Agricultural Department, and other appointments soon followed. Other States have also established Government Veterinary Departments, but I do not propose to deal with them here.

Although good work had been done by the original pioneers of the profession individually in warning the public against the danger of animal diseases, as a body they were numerically weak and ineffective. Indeed, no attempt had been made to combine and act in unison, and each one seemed to be pulling in a different direction.

Such was the condition of affairs when I arrived in Melbourne; and when I had made up my mind to stay, and had thoroughly considered the situation, I came to the conclusion that there was a great deal of pioneering work yet to be done before the profession could obtain a permanent footing.

Two things appeared to be necessary, *viz.*:—

1. To overcome the ignorance and prejudice of stock-owners and the general public as to the aim and scope of veterinary science; and
2. To educate men for the veterinary profession who had been reared in the country, and were already acquainted with the special conditions.

The increasing frequency and great mortality caused by outbreaks of diseases such as pleuro-pneumonia and anthrax, caused considerable alarm, as evinced by the appointment of Royal Commissions to enquire into them; but, instead of invoking the aid of the veterinary profession as they might have done, or even listening to frequent warnings and advice gratuitously given, the most irrational and absurd measures were adopted. Take the case of the first outbreak of the above-mentioned disease—contagious pleuro-pneumonia in cattle. Although diagnosed while yet confined to a single herd by the late Mr. Henry Wragge, M.R.C.V.S., and he had advised the immediate destruction of the whole herd, his advice was ignored; and while a Royal Commission sat to enquire into the cause, etc., the disease got away, and ultimately spread to every State in the Commonwealth.

But this was not the worst of the bungling. Laymen, ignorant of even the elements of pathological knowledge, essayed to inoculate cattle for the prevention of pleuro-pneumonia, and frequently used virus obtained from tuberculous animals, with the result that the latter disease was spread broadcast. That tuberculosis can be spread by pleuro virus obtained from an animal suffering from both diseases at the same time I have proved experimentally. Great mortality was also caused through the use of virus tainted with septic organisms.

The late Mr. Graham Mitchell, F.R.C.V.S., missed no opportunity of pointing out through the public press, and in every possible way, the folly of trusting to lay advisers, but, unfortunately, with little tangible result other than to bring calumny on himself, and to be called an alarmist.

The Hon. John Stewart, M.L.C., M.R.C.V.S., and Mr. T. Chalwin, of Adelaide, likewise did much to enlighten the public on veterinary matters; but it was long before any beneficial effect became apparent. Mr. Mitchell had also written a pamphlet on anthrax.

Seeing that single-handed efforts produced so little effect, I called a meeting of the few veterinary surgeons that were available, and suggested the advisability of forming an association. The meeting was held at Menzies' Hotel, in 1880, the chair being taken by Mr. Mitchell, and it was decided to form an association. At a subsequent meeting, a set of rules which had been drawn up was submitted and approved, and office-bearers were thereupon appointed, Mr. Mitchell being elected president, Mr. Vincent treasurer, and myself secretary. Nearly every qualified veterinary surgeon then in Australia joined either as an ordinary or corresponding member, including Sir Charles McMahon, M.R.C.V.S., the Hon. John Stewart, M.L.C., M.R.C.V.S., Sydney, and Mr. R. Gibton, LL.D., M.R.C.V.S. Monthly meetings were regularly held, and various important questions discussed, and the results published in the daily press. A considerable amount of correspondence was carried on with members in other colonies, and good work was done in apprising the public of the necessity of more scientific and systematic efforts being made to suppress animal diseases and protect the public health.

In 1882 *The Australasian Veterinary Journal* was started, and published monthly, of which Mr. G. Mitchell, T. Chalwin, and myself were co-editors. After a period of 18 months or so, the journal had to be discontinued for financial reasons.

In 1891 a quarterly journal was commenced, *viz.*: *The Veterinary and Live Stock Journal*, edited by the writer, Mr. S. S. Cameron, M.R.C.V.S., and Mr. Forbes Burn, F.R.H.A.S. This periodical had a considerable circulation amongst stock-owners, and it was with great regret that it had to be discontinued after some six or eight numbers had been published.

In 1901 a third veterinary journal was launched, *The Australasian Veterinary Journal*, a quarterly, edited by Mr. W. A. N. Robertson, G.M.V.C. This also, for lack of support, collapsed after a few issues.

After that *The Farm and Home* opened its columns to the profession, and continued for years to publish specially written veterinary articles under the heading of *The Veterinary Record*.

Besides these special publications, the public press had always willingly received articles on veterinary subjects.

In 1884 my small work on "The Diseases of Australian Horses" was published.

The veterinary articles were discontinued in *The Farm and Home* chiefly because the Gazettes and Journals published by the Government Agricultural Departments took up the publication of instructive veterinary articles, and have continued to do so up to the present. Other means of enlightening stock-owners and others on veterinary matters were the reading of papers and giving lectures and demonstrations before agricultural societies at the annual agricultural conventions, and at the annual conferences of the Butter Factory Managers' Association. A series of lectures on horse-shoeing and first veterinary aid was given at the Working Men's College. This work had all been done by private individuals, but is now more effectively carried on by the veterinary officers of the Agricultural Department.

First Attempt to Secure State Veterinary School. In 1882 the Veterinary Association succeeded in obtaining, through the then Minister of Lands, the Hon. Walter Madden, a small piece of land in the old police paddock at Richmond as a site for a veterinary school or college. Although the site was much too small for the purpose, we were glad to get it, in the hope that we might be able to exchange it at some future date for a more suitable one. In this, however, we were disappointed. When it was found that we had made no use of it, and being further influenced by a deputation of Richmond residents who objected to a veterinary college being established in their midst, the Government cancelled the grant. It will be of interest to relate that Mr. G. Mitchell had, on his own initiative, instructed an architect to draw plans of the proposed college, and the Veterinary Association was served with an account for plans and specifications. The association, having had no say in the matter, denied liability; thereupon Mr. Mitchell was personally sued for the amount, and was ordered by the Court to pay the amount and costs. This broke up the association, and some years elapsed before another was formed.

In consequence of representations I had made through the press as to the great prevalence of tuberculosis amongst cattle slaughtered for human consumption, and demonstrations made before the officers of the Stock Department, the matter was brought before the Upper Chamber by the late Hon. James Buchanan, of Berwick, and a Royal Commission was appointed to enquire into it. A voluminous report of the evidence taken was published, together with numerous photographs of meat affected with different stages of the disease. As an outcome of this, a staff of inspectors was appointed to inspect at the abattoirs and markets, and it was also decided to appoint a qualified veterinary surgeon to inspect the City abattoirs and take statistics of the number of diseased animals slaughtered, and the diseases, etc. Unfortunately, no suitable applicant turned up, and the appointment was never made.

During the next few years the profession in Melbourne received some additions, *viz.*, Messrs. Goule, Cohen, Wragge, and Sharp, all of whom settled here. This accession led to the formation of another Veterinary Association, which immediately took up the question of framing a Veterinary Surgeons' Bill to enable stock-owners to distinguish between qualified and unqualified men, and to protect the interests of the profession. This Bill was based chiefly on the then existing English Veterinary Surgeons' Act, and, as secretary of the association, it fell to the writer's lot to make the rough draft. The Bill was brought before Parliament by the late Mr. Bosisto, M.P., and passed after receiving some additions at his hands from the Pharmacy Act, and further changes in the Upper House, particularly the introduction of a most important clause, at the instance of the late Hon. Dr. Beaney, providing for a four years' course.

Establishment of the Veterinary College.—Owing to a promise having been made to Mr. Bosisto that, in the event of the Veterinary Surgeons' Bill being passed, an early attempt would be made to establish a veterinary college, and receiving no help from

the Government in regard to providing a suitable site or funds to erect the necessary buildings, as well as lack of interest in the matters displayed by my colleagues, I determined to try what I could do single-handed.

The first step taken was to obtain the signatures of all the leading horse-owners, stock and station agents, medical men, and others in Melbourne, to a requisition to the City Council praying that a college might be erected on the Market reserve adjoining the Horse Market, Sydney Road, Parkville, being part of the reserve on which the new University Veterinary School now stands.

The requisition was signed by a large number of people, and duly presented to the City Council, who received it very favourably, and submitted it to the legislative committee to be dealt with. Unfortunately, it was discovered that they held the land in trust for market purposes only, and with special legislation it could not be used for any other purpose. This scheme was, therefore, reluctantly abandoned; but, having been assured by some of the leading members of the Government that if it could be shown that such an institution was a necessity and students forthcoming assistance would be given, I determined to establish a private college. In 1885 I had purchased the site of the old college, and immediately opened a veterinary hospital. Not, however, without considerable difficulty was it established. Owners of sick animals had not been accustomed to send them to a hospital for treatment, and for the first year I found it necessary to buy the patients in many instances, and sell them at a good profit, either to the original owner or someone else. Nevertheless, in a couple of years it was no unusual thing to have 30 or 40 patients in at a time.

In 1886 the college buildings were erected, but the institution was not opened for teaching purposes till January, 1888. A curriculum was arranged in accordance with the regulations of the Act, and Mr. E. Rivett, M.R.C.V.S., and Dr. Joyce, having been engaged to assist in teaching, classes were opened, and six students entered. The teaching staff was added to as the necessity arose. Amongst the new additions were Mr. C. Vyner, M.R.C.V.S., Mr. S. S. Cameron, M.R.C.V.S., and Professor McBride, PH.D., M.R.C.V.S., and Mr. A. Goule, M.R.C.V.S. During the first year students attended the College of Pharmacy for chemistry and materia medica; but, in consequence of Professor Jackson severing his connection with that institution and afterwards engaging to teach at the Veterinary College, a libellous article appeared in the *Pharmaceutical Journal* depreciating the latter institution. This led to an action at law, and the Pharmaceutical Society was mulcted in damages to the extent of £416, and costs. This action was an important event in the history of the College, and was rendered necessary on account of the fact that the Veterinary Board had withdrawn its recognition of the teaching, and refused to appoint examiners to examine the students in consequence of the article referred to. The effect of the verdict on the Veterinary Board was electrical. At its next meeting, a resolution was passed recognising the teaching, and it was decided to appoint an Examining Board.

After that things went more smoothly for a time. It would occupy too much time to relate the many ups and downs of the old college. Suffice it to say that the Veterinary Board always obtained the best available examiners, often seeking aid from Sydney, and that from the first a high standard of efficiency was insisted upon, with the result that graduates have established a status for the profession that many countries might envy.

Another event which occurred in 1891, and caused a considerable amount of anxiety for a time, was an effort on the part of an association formed by a section of the profession to obtain a site and funds to establish a State Veterinary School. The association so far succeeded as to obtain a site at Spotswood, and negotiations were opened with me in order to have the teaching transferred to the proposed State institution. As the site was a most inconvenient and unsuitable one, I strongly opposed it, feeling certain that failure would be sure to follow if such a transference took place. The scheme was abandoned, and it was hoped that a better site would have been substituted; but nothing further was accomplished till the City Council generously granted the site of the present University Veterinary School, in Parkville; and, at the instance of the Hon. Geo. Swinburne, then Minister of Agriculture, the Government provided the necessary funds to build and maintain the new institution. To Dr. Cameron is due the credit of inducing the Minister to make the grant.

So, after a struggling on for 20 years, the old college gave place to the new school, and a new regime under the University Council is now in full operation.

During the old regime two applications were made to obtain affiliation with the Royal College of Veterinary Surgeons, the first by myself, as principal of the College, in 1896, and the second by the Veterinary Board in 1898, and in both instances the reply was that the only bar to this recognition was the absence of a matriculation examination, which had not been provided for in the Veterinary Surgeons' Act of Victoria.

The function of the Veterinary Board has been to administer the Act, and its main duties have been to appoint examiners to examine the students, to register graduates of recognised veterinary schools and colleges, and practitioners who had practised as veterinary surgeons for seven years immediately preceding the passing of the Act, and also to prosecute persons infringing any of the provisions of the Act.

The disclosures in reference to the large numbers of diseased animals slaughtered at the various abattoirs led to inspection of the principal slaughterhouses, and more recently the Meat and Dairy Supervision Acts, for which the late Dr. Greswell, Chairman of the Board of Health, and Dr. Cameron were responsible, has been of the utmost value in securing a wholesome food supply for the people and also for export.

The establishment of both Commonwealth and State Veterinary Departments has been the means of getting all the most serious animal diseases under control, of educating the stock-owners to the necessity of keeping their flocks and herds free from disease, and by adopting the system of inspecting and certifying to the soundness of stallions, the soundness and stamina of our horses is being gradually improved.

Australian graduated veterinary surgeons now occupy important Government and other public positions in every State in the Commonwealth as well as in New Zealand, the Straits Settlements, and in London. A large number are doing good work in private practice, and there is a continual demand for good men in both private and public positions.

During the Boer War some 15 or 16 were on active service for the Imperial Government, and were highly appreciated by the Imperial officers, some being retained after the war was over.

The establishment of a University Veterinary School and Veterinary Research Institute are matters of more recent date.

As may be imagined the question of dealing with applications for registration of men alleged to have practised during the prescribed period has been a frequent source of trouble, and sometimes of expensive litigation. But, on the whole, the Board has carried out its duties fearlessly, both in regard to refusing registration to applicants whom it considered ineligible, and in prosecuting persons for illegally practising, and the members of the profession, in spite of occasional grumbling about unregistered persons practising, are well protected in Victoria, and stock-owners on the other hand need not be imposed upon by unqualified men. It is gratifying to know that the other States are following Victoria's example, and it is to be hoped that ere long there will be uniform legislation or something approaching it throughout the whole Commonwealth.

WHAT HAS THE VETERINARY PROFESSION DONE FOR AUSTRALIA?—Notwithstanding the long-delayed recognition of the services of veterinary surgeons to the stock-owning and general public, it must be admitted that especially during the last 25 years (*i.e.*, before 1913) our profession has put up a grand record in Australia. The veterinary inspection of all imported stock has prevented the introduction of any new diseases. The importance of this inspection is well exemplified in the detection by Mr. Edward Stanley, F.R.C.V.S., of glanders in a troop of circus horses that had been brought over from America. The affected horses were immediately destroyed, and the rest quarantined effectively on an island, and the disease prevented from entering the State.

The early diagnosis of pleuro-pneumonia by the late Mr. Henry Wragge and the strong warning given by him against allowing the disease to spread, though his warning was not observed, is worthy of permanent record.

The recognition of an outbreak of foot-and-mouth disease by the late Mr. Graham Mitchell, in 1872, and the immediate destruction of the affected herd effectually arrested further spreading of the disease, and the amount thus saved to the country is incalculable. Mr. Mitchell also introduced and extensively practised inoculation for the prevention of pleuro-pneumonia. He also, assisted by the writer, commenced the cultivation of calf lymph for the vaccination of children, which is still (1913) carried on at the Royal Park depot.

After receiving instruction from Pasteur's representatives, Messrs. Germont and Loir, who came out to New South Wales to introduce vaccination against anthrax, I commenced the cultivation of tubercle-free pleuro virus on calves, and continued to use it and supply it to stock-owners for several years, with the result that pleuro-pneumonia was practically stamped out of the herds of Victoria, and the possibility of tuberculosis being spread by means of tainted pleuro virus greatly reduced.

By obtaining the Veterinary Surgeons' Act, and providing for the registration of all qualified veterinary surgeons, stock-owners could protect themselves from the imposition of unqualified practitioners, while the establishment of a veterinary college has been the means of saving the lives of thousands of valuable animals and much wealth to the community.

The introduction of tuberculin testing for tuberculosis in cattle,

and its frequent use by members of the profession in detecting the disease in its most latent forms, has led to an enormous reduction in the prevalence of that disease in cattle, and indirectly of that of many human beings.

Inoculation for the prevention of blackleg in calves has been the means of preventing much loss to dairymen from that disease.

The general outbreak of swine fever in 1901 was practically stamped out in Victoria in three months, through every qualified veterinary surgeon in the State being appointed an inspector, and acting under my instructions.

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(ii) Later Veterinary Work in Australia, 1912-44

H. A. Woodruff, of the Royal Veterinary College, London, was appointed to the Chair of Animal Pathology at the Melbourne Veterinary College in 1912 and took up his duties as head of the College just before the war of 1914-18.

The Sydney Veterinary College was opened in 1910 and two men whose labours contributed to this development were Professor J. D. Stewart and Col. Max Henry. For a time there were two veterinary colleges. Then, in 1928, the Melbourne School closed. Sydney rapidly developed and has earned renown as a centre for veterinary education.

A nucleus of men with a progressive outlook was in Australia before the war of 1914-18. Soon a most enterprising school of Australian researchers began to develop. Sydney Dodd, L. B. Bull, and H. R. Seddon were establishing themselves at about that time. Pioneer work on anaerobic bacteriology was done in Australia in the years following the close of the war. Seddon's elucidation of the cause of "Midland cattle disease" (botulism) is a classic piece of work. Sidney Dodd had great success and heartbreaking disappointment in his investigation of "black disease," but he made history. Younger men took up the work where he left off and as a result there is good understanding of "black disease" of sheep and its rather complex ecology in which the liver fluke and *Clostridium oedematiens* play major roles. A. W. Turner's name will remain linked with this subject. Other anaerobic diseases have been of great importance and in this connection, notably swelled head enterotoxaemia and botulism in sheep, L. B. Bull, H. W. Bennetts, D. A. Gill, C. Edgar and D. T. Oxer have made important contributions to knowledge of the subject.

The list of subjects and of those who have indelibly linked their names with Australian work on them is impressive. In general bacteriology, L. B. Bull, H. R. Seddon, H. R. Carne, D. A. Gill and W. L. Hindmarsh are well known. Caseous lymphadenitis has been studied intensively by H. R. Seddon, L. B. Bull, H. R. Carne and D. T. Oxer. *Listeria* infection in animals was first described by D. A. Gill, and *Listeria* have since been found to be very important pathogens of human beings and animals in other parts of the world. The work of W. I. B. Beveridge and Gregory on foot rot in sheep has aroused great interest and opened up new avenues of approach to its control. Practical results are now being obtained in Australia in dealing with the disease. J. Legg has done important work on piroplasmosis and the tick vectors responsible for its transmission.

Bovine contagious pleuro-pneumonia, one of the major diseases in north-eastern Australia, has evoked magnificent veterinary enterprise; the work of A. W. Turner, Campbell and others on this disease and its causal organism is a landmark in the literature of the subject.

When ephemeral fever of cattle broke out in cattle a few years ago a splendid team of investigators was available to study it and as a result they have made important contributions to our knowledge of the disease.

Sheep "blowflies" are serious pests to a country with a large sheep industry and Australian workers have been in the van in the investigations on methods for control of the pest. L. B. Bull, W. L. Hindmarch and H. G. Belschner are veterinary workers who have done their share in this work.

Helminth parasites of livestock, particularly of sheep, have received great attention in Australia and here the names of Clunies Ross and H. McL. Gordon stand out. Their book on the parasites of sheep has been used with appreciation in many countries.

Knowledge of plant poisoning in animals has advanced enormously during the last three decades and, of the three countries where the most important work has been done, the United States, the Union of South Africa and Australia, the last has at least held its own. In this work H. R. Seddon, H. R. Carne and W. L. Hindmarsh have been active.

Work has been done in Australia on breeding and on fertility. R. B. Kelley has made a close study of the advantages to be obtained from crossing Zebu cattle with those of European breeds, with the object of producing a type that is suited to live in the hotter parts of the country and capable of offering some resistance to tick infestation and piroplasmosis. R. M. C. Gunn has done successful work on fertility and his results are watched with great interest in other countries.

Nutritional deficiency diseases are important in parts of Australia. "Enzootic marasmus" (Coast disease) of sheep and cattle, investigated by J. F. Filmer and Underwood, and "nutritional anaemia" of sheep investigated by W. L. Hindmarsh and others, both conditions due to cobalt deficiency, are examples. "Enzootic ataxia" of lambs and "stringy" wool in sheep, both due to copper deficiency, were investigated by H. W. Bennetts.

J. A. Gilruth probably had as much influence on Australian veterinary affairs as any man. He was a great administrator and was an active worker in the more primitive days of bacteriology and steered his way through difficult and ill-charted seas with great common sense and assiduity. He was the first Chief of the Animal Health Division of the Australian Council for Scientific and Industrial Research. A man who took a big share in the development of the work of the Melbourne Veterinary College was E. F. J. Bordeaux. As a clinician he contributed a great deal to teaching and he had a great reputation.

In the earlier days when men of science were rarer than they are now, veterinarians played a major role in some parts of the world in spheres wider than those which include veterinary science. As an example an outstanding Director of Agriculture in Victoria who held office for many years was S. S. Cameron.

With its great export trade in frozen meat Australia had to rely on its veterinarians for much skilled advice and organisation and can consider itself to have been well served in this respect. A name that is linked with this enterprise is that of W. A. N. Robertson, Chief of the Division of Veterinary Hygiene, Commonwealth Department of Health.

Australia is in a unique position with regard to animal diseases and for this can only thank its veterinary profession. In spite of the hazards of importation it is free from glanders, rinderpest, dourine, rabies, foot-and-mouth disease, sheep scab and many other serious diseases.

The profession is well organised. The Australian Veterinary Association is a very active and influential body and its journal, *The Australian Veterinary Journal*, has set a very high standard.

The development of the veterinary research centres has been rapid during recent years and is impressive. The federal state-aided work is controlled by the Animal Health Division of the Council for Scientific and Industrial Research at the head of which is Dr. L. B. Bull. There is active co-operation with the livestock industry and substantial assistance is received from such bodies as the Australian Wool Board and the Australian Cattle Research Association.

In Victoria there is the Veterinary Research Institute of the University of Melbourne, with the Animal Health Laboratory of the Council for Scientific and Industrial Research in its grounds, the latter having been opened in 1938. There is a field station at Werribee (formerly at Road End, Berwick) where an experimental herd has been established for the study of bovine mastitis.

In South Australia there is the Institute of Medical and Veterinary Science at Adelaide. Dr. L. B. Bull was the Director from 1925 until he received his appointment as Chief of the Animal Health Division, Council for Scientific and Industrial Research in 1935. As now organized there is a Medical Director, with four main departments, Bacteriology, Clinical Pathology, Biochemistry and Veterinary Pathology.

In New South Wales there is the McMaster Animal Health Laboratory (opened in 1931—Director, D. A. Gill) in the grounds of Sydney University, with the McMaster Field Station, Badgery's Creek, and the McGarvie Smith Field Station near St. Mary's, Cumberland. The McMaster Field Station is under the Council for Scientific and Industrial Research and the McGarvie Smith Station is a field training centre for Sydney University. The veterinary department, New South Wales, the Chief of which is Colonel Max Henry, has the Glenfield Laboratory which was developed with such success by H. R. Seddon and has since been directed by W. L. Hindmarsh.

In Queensland the School of Veterinary Science was opened within Brisbane University in 1936. It was closed in 1942. There is an Animal Health Station at Yeerongpilly under the Queensland Department of Agriculture and Stock, a Field Station at Cunnamulla, and the National Field Station, Gilruth Plains, both the latter being under the Council for Scientific and Industrial Research.

In Western Australia there is a veterinary laboratory of the Department of Agriculture at Perth. In Tasmania there is a veterinary laboratory at Launceston.

Finally, an important service is the Australian Army Veterinary Corps. The Corps was put to a severe test in the war of 1918 and came through with flying colours, having seen service in several theatres of war, notably in the Middle East. It played an important

part in the recent war, though mechanisation must have limited the calls on its services. Horses were used for internal transport services of the Commonwealth. Innumerable tons of petrol and rubber have been saved in this way. Some horsed units were used in New Guinea and North Australia.

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(f) The Veterinary Profession in the Crown Colonies

The Crown Colonies, as far as this brief historical review is concerned, refer to the non-self-governing Dependencies of the Empire including Colonies properly so called, Protectorates and Mandated Territories. They cover an area of some 2,000,000 square miles with a population of about 50,000,000, of which the vast majority lie within the tropical zone. From the historical point of view concerning the veterinary profession the African dependencies are the most important and will receive the major consideration in this section. As far as domestic stock is concerned it must be mentioned here that apart from horses, pigs, sheep and goats there are some 20,000,000 cattle in these territories and stock-rearing is the principal and traditional occupation of a large proportion of the native inhabitants.

The development of the veterinary services is comparatively recent although individual veterinarians often figure in the earlier records long before anything approaching an organised service became established. Stordy went to Kenya in 1896 and pioneered the veterinary service in the East African territories and lived to see well established departments in Kenya, Uganda and Tanganyika. In 1901 an officer went to Northern Nigeria with the mounted infantry and, indeed, Army veterinarians were often the first in the colonial field in the early days; their sojourn, however, usually was brief and their experience limited but many of these officers brought back valuable information about tropical diseases of animals and pressed the need for the establishment of veterinary services.

The earliest organised Veterinary Departments were in the South African colonies which later became the Union, and the landmark associated with the development of the veterinary services in Southern Africa was undoubtedly the devastating rinderpest epizootic which occurred during the first few years of this century and which had swept southwards from Eritrea. It is perhaps appropriate to recall that the disease was introduced with cattle imported from Asia to feed the Italian troops campaigning in that country about 1888. In some 14 years it had swept the length of the continent, killing vast numbers of cattle and game and leaving the disease smouldering wherever enough susceptible animals remained as fuel to enable the disease to exist. In the British territories south of the Zambesi, some 5,000,000 head of cattle were wiped out.

The history of the veterinary profession, at any rate in the African colonies, is inextricably bound up with the history of rinderpest and indeed the devastating outbreaks of this disease were probably responsible for stirring the authorities to action and awakening an interest in animal health and thus creating veterinary services in embryo. Much later, between 1914 and 1925, it is recorded that the cattle population of Nigeria was reduced by as much as 25 per cent., almost entirely through rinderpest. The same can be said generally of East Africa though, of course, many other diseases were also present. The methods of dealing with rinderpest are important, both historically and scientifically, and serve to demonstrate the progress that has been made in combating this scourge during the past 40 years. The filtrable nature of the virus was established by Nicole and Adil Bey, whilst, later, Koch developed his bile method of immunising cattle, one of the earliest pointers to the importance of prophylactic measures in veterinary medicine. This was followed by the discovery that serum from immunised and recovered animals contained protective bodies and this led to the serum-virus or simultaneous method—the Kolle-Turner method—of conferring an active immunity and thus preventing the disease in large areas. Rinderpest was eventually eradicated from South Africa but it continued to take a vast annual toll of cattle further north throughout Africa. Veterinary departments, usually subsidiary to agricultural sections, were created in East Africa. Stordy, as already mentioned, was the first to develop the veterinary service, and for many years his parish extended over the whole of Kenya and Uganda—some 300,000 square miles! Hutchins (1909) was the first Chief Veterinary Officer in Uganda, whilst Griffiths (1912) went to Nyasaland, Lane (1912) to Northern Rhodesia and Gray (1908) to Southern Rhodesia. In the other territories now under the High Commissioner for South Africa the names of Verney (Basutoland), Chase (Bechuanaland) and Elder (Swaziland) should be recorded. In West Africa Brandt (1913) went to Nigeria from Kenya, whilst Beal (1908) represented the profession in the Gold Coast. The first Research Institute of any consequence was opened at Kabete in Kenya in 1909 and developed by Montgomery who will be referred to later in connection with the development and growth of the service.

Apart from Africa veterinary departments were commenced in Ceylon (Sturgess), Cyprus (Roe) and later in the Malay States.

As already indicated the main pre-occupation of these young veterinary departments both in Africa and Asia was for many years the control of rinderpest, but progress was made and the methods, thanks to research work, were improved. Serum continued to be used but was supplemented by a method of vaccination using formalised and glycerinised spleen pulp. This was a great step forward and was first used in the Philippines. Later the adoption of the attenuated goat passaged virus in East Africa marked yet another rung in the ladder of progress. This method was first used in India by Edwards and Stirling and its application to African stock served to illustrate what enormous differences in susceptibility to rinderpest exist in the bovine species for it was soon evident that the Indian goat virus was too virulent for African cattle and further attenuation was necessary before it was safe to use on a large scale. It was discovered that the goat virus as spleen pulp could be desiccated and stored and this facilitated transport, especially by air. Only recently the South African territories were, after a space of 40 years, again threatened by a southward spread of rinderpest, and this impending catastrophe was only prevented by a colossal combined effort on the part of the Union and the Crown Colonies further north. Millions of cattle were immunised, using a combination of all the known modern prophylactic methods, more especially the goat virus, and belts of immune cattle as barriers were thus created. Before leaving this subject it must be pointed out that the wild fauna commonly referred to as big game are susceptible to rinderpest and greatly interfere with its efficient control. The veterinary departments have always been interested in game from the biological and ecological standpoints, and recently have made and are making a deeper study of the game factor, not only in connection with rinderpest but also as regards tsetse fly and trypanosomiasis and other diseases.

Research and Progress in Other Diseases

In a review of this kind only a very few of the major problems can be touched on and that with great brevity.

Contagious Pleuro-pneumonia of Cattle.—This disease has constituted, and continues to constitute, a major problem, but constant research has yielded results and methods of diagnosis and immunisation have been evolved. The early methods consisted of inoculating the lymph-like transudate from the pleurae and lungs after treatment with various chemicals. This crude method served its purpose but was very unsatisfactory and has been replaced by a vaccination with the cultured organism. Diagnostic methods are still imperfect and much research is still required both in the diagnostic and immunological fields.

Trypanosomiasis and Tsetse Fly.—This vast subject can only be referred to as one of the urgent requirements for research. Areas of thousands of miles of fertile land are rendered useless owing to the presence of Glossina which transmits the organism of trypanosomiasis to man and animals. The earliest travellers and explorers often referred to their horses dying in certain areas and it was not until Bruce discovered the trypanosome and its relationship to the tsetse fly that the cause of death was established and it was realised that these flies existed in certain well defined areas. Almost one-tenth of the native population of Uganda was wiped out by sleeping sickness in 1902-3 and the disease even now is responsible for thousands of deaths in man and animals each year. The game acts as a reservoir for the trypanosome and the study of this factor is being urgently pursued. Veterinarians have been associated with research into the problem of trypanosomiasis since the earliest work and the name of Hutchins in Uganda should be mentioned in connection with the Royal Commission on Sleeping Sickness in 1910. Work has continued on the ecology of game and fly and the pathology and chemotherapy of trypanosomiasis.

Ticks and Tick-borne Diseases.—It is perhaps not generally realised what enormous losses in domestic animals are incurred annually in the tropics from tick-borne diseases. These arthropods are almost ubiquitous and are the cause of illness and mortality in all species of domestic animals, and the history of the veterinary profession in the Crown Colonies is intimately associated with the study and combating of tick-borne diseases and the control of ticks. East Coast fever is the most important and is responsible for huge losses. As with other similar diseases, the control of the tick is all-important and the institution of dipping in various areas has been and is being gradually developed by the veterinary departments. There is no cure and all attempts to find a chemotherapeutic agent have proved a failure. Anaplasmosis, heartwater (Rickettsiasis) and the Babesiases in all animals take

their toll. Recently work on chemotherapy has given promising results in some of these conditions.

Space does not allow reference to the host of other diseases which the veterinary profession is called on to deal with in the tropics, but suffice it to say that in spite of the lack of funds and lack of staff great progress has been made, and the development of the stock industry is the result of this successful endeavour.

The Stock Industry. The history of the veterinary profession in the Crown Colonies is intimately bound up with the economic development and improvement of the indigenous stock.

It is natural that when disease is checked there is then the opportunity of turning the assets thus saved to good account and the veterinary profession has realised this to the full.

This has involved much work on nutrition, breeding and improved husbandry, whilst the animal products such as milk, ghee, butter, meat, hides and skins have received much attention from the veterinary departments and some of these products, especially hides and skins, have been improved and developed until in many cases they represent a significant proportion of the colonies' exports.

During the war the various animal products have assumed a much greater importance and the veterinary departments have risen magnificently to the occasion and have organised vital supplies of meat, milk, cheese, bacon, etc., thus saving valuable shipping space and contributing in no small measure to the Imperial war effort. It is strange that such a crisis appears to have been necessary to direct the attention of the authorities in the colonies to the wide and vital importance of veterinary work in the development of the Colonial Empire.

Education. The veterinary profession in the colonies where the indigenous population is primitive and uncivilised is essentially educational from the beginning. This general education has been canalised, as the work developed, into special training of selected indigenous population in the elementary types of professional work such as inoculating, castrating, etc. The training and the utilisation of the native is an essential factor in colonial progress and development, and the veterinary departments have not been lacking in this sphere.

In Uganda there is an embryo University of Eastern Africa and a Veterinary School was established as one of the original departments and Veterinary Science one of the foundation courses of study as far back as 1927. The course is based on the M.R.C.V.S. curriculum specially adapted for the tropics and several generations of African veterinary officers who have gained the local certificate are employed in Government service. The course is entirely in English and extends over five years. The first two years are taken in conjunction with the medical and agricultural students, whilst the remaining three are taken at the veterinary school which is closely associated with the research laboratories and farm.

A similar organisation has recently been started in Nigeria for West Africa.

Organisation and Growth. The first veterinary officers were usually appointed singly and were attached to either the Agricultural or the Medical Department.

From these early beginnings an embryo department was developed which began to be organised into field and research sections. Laboratories were built and equipped and eventually a complete veterinary organisation, with its own administrative head, came into being.

It must be recorded, however, that there appears to have been from the very first a shortage of staff and funds for the work in hand and, further, it was considered sufficient for the veterinary department to be a section of the agricultural or medical departments and it was not until 1920 that a Committee presided over by Viscount Milner recommended that separate and independent veterinary departments be created in the Crown Colonies.

In spite of this, many of the veterinary departments continued as part of other departments and this led to much dissatisfaction and altogether was a most undesirable state of affairs.

In 1921 R. E. Montgomery was appointed as Veterinary Adviser to the East African colonies, where he did much to integrate the activities of the veterinary departments in Kenya, Uganda and Tanganyika. His work was not easy owing to the fact that one of the departments was still administered by the Director of Agriculture but it pointed the way to closer union in East Africa.

In 1929 Lord Lovat presided over a Committee appointed by the Secretary of State for the Colonies to investigate and report on Veterinary Research and Administration in the Colonies. This Committee had very wide terms of reference and produced a most important report with far-reaching recommendations which were welcomed by the whole profession. Indeed the Lovat Report may be taken as the charter of the veterinary profession in the Crown Colonies and recommended the creation of a unified Colonial Veterinary Service, the appointment of an Adviser on Animal Health by the Secretary of State, the creation of scholarships, improved pay and prospects, a central research station and many other necessary and desirable innovations. Although the Report was accepted only a few of the recommendations were acted upon. Of these the appointment of R. E. Montgomery as the first Veterinary Adviser at the Colonial Office and the institution of Colonial Veterinary Scholarships actually eventuated and it was tragic that Montgomery did not live longer to occupy his important office. However, there is no doubt that on retrospect great improvements have taken place but there is room for many more. The N.V.M.A. in recent years has taken a greater interest in the Colonial Service and has appointed an Overseas Committee which has continually pressed for improvements in the Service, but in spite of its many efforts and warnings the position as regards recruitment is worse than in 1929 when the Lovat Committee was appointed.

In East Africa a standing Veterinary Research Committee was formed in 1937. This body, on which there are representatives from the veterinary departments of the East African colonies, meets annually and co-ordinates research in these territories. This represents a very important advance and it is to be hoped that eventually a Central Research Station and a post-graduate Veterinary School will be instituted in the near future, and that the Colonial Veterinary Service will progress with even greater efficiency in the years to come.

VII. Veterinary Research

The achievements of the veterinary profession in the domain of research stretch back as far as the R.C.V.S. itself. Prior to the granting of the Charter, the two veterinary colleges which had been established in this country issued certificates of competency to practise the veterinary art. It is of interest that the vital part played by some of these early practitioners in the control of the various scourges which afflict the animal population, was placed before the Government of those times in the Royal Charter of Incorporation of 1844 in which the following sentences appear: "That our said petitioners humbly submitted that the institution of the Royal Veterinary College had been of great advantage to the country and to our royal army, and the utility of it had been so highly estimated, that some years ago a board of general officers was appointed to take the utility of the said institution into consideration, and they reported that the loss of horses accruing to our cavalry, which had been theretofore very heavy, was principally owing to the total ignorance of those who, previously to the appointment of veterinary surgeons educated at the said Veterinary College, had had the medical care of them; that for the instruction of the pupils of the said Veterinary College, a professor, an assistant professor, and other proper officers, are appointed, so as to form a school of veterinary art, in which the anatomical structure of horses, cattle, sheep, and dogs, and other domesticated animals, the diseases to which they are subject, and the remedies proper to be applied, are investigated and regularly taught, and that by these means enlightened practitioners of liberal education are dispersed over our kingdom."

It is as well to reflect, therefore, that the beginnings of modern veterinary research can be traced to the early part of the 19th century. It is true that workers in this field may have lacked the instruments of precision and the numerous laboratory aids which the scientist has evolved for the better understanding of morbid conditions, but a perusal of the periodicals which appeared prior to the opening of Pasteurian era will show that, notwithstanding the fetters of tradition and a wide scepticism concerning the infective nature of animal diseases, many clinicians of those times were highly skilled diagnosticians who by developing their powers of observation to a high degree had gained a profound insight into the course of various conditions, the aetiology of which was as then unknown. It must not be forgotten, therefore, that the foundations laid in earlier times by these talented clinicians have formed a sound basis for the edifice subsequently erected by veterinary research workers.

By virtue of its constitution, the R.C.V.S. has no direct concern with or control over investigations into diseases of animals; nevertheless, we hope to show that the progress of research in this country and in overseas territories has been influenced by changes taking place within the Royal College itself. The wider aspect of veterinary research in its relation to Government departments, veterinary colleges, etc., will be touched upon, but is really beyond the scope of this contribution: in any case, the history of veterinary research in this large field has been amply covered in the masterly article by Dr. J. T. Edwards in the King's Silver Jubilee Number of *The Record*.*

It is necessary to point out that the granting of the Charter provided a much needed stimulus to the profession and in the era which

* *Vet. Rec.* (1935.) 15. 515.

followed many valuable contributions were made to the advancement in the status of our corporate body by eminent members who were elected to the Council. These same members were concerned at the enormous losses occasioned by various diseases, and their main contribution was undoubtedly their pioneer work aimed at the eradication of certain of the major epizootics. In the face of strong opposition from many quarters, including misguided commercial interests, the extermination of rinderpest, pleuro-pneumonia, and glanders was accomplished in a shorter space of time than might have been expected by the most sanguine observer. To what extent were these successes attributable to the R.C.V.S. ? It is clear that the College as a body corporate was not directly concerned with these schemes, but indirectly it undoubtedly played an important part through the activities of individual members of outstanding ability and perspicacity who controlled the examinations for which the College was responsible. The College has ever been mindful of its responsibilities in this direction and much of the success which has been attained in recent decades has been due in no small measure to the steady improvement in the system of education which we owe to the Gamgees, father and son, G. T. Brown, S. Fleming, F. Fitzwygram, W. Hunting, J. M'Fadyean, S. Stockman, O. C. Bradley, and many more too numerous to mention. The teaching in the colleges, influenced as undoubtedly it has been by the system of external examinations of the R.C.V.S., has aimed at the creation of a body of graduates well grounded in the basic principles of the subjects in the veterinary curriculum—anatomy, physiology, animal husbandry, pathology, medicine and surgery. It can be claimed that at no time since the Charter was granted has the College failed in its trust ; we have never lacked men of ability capable of undertaking and fulfilling with distinction the tasks which confront the veterinary research worker.

Unfortunately, the early interest evinced by the Board of Agriculture in the control of animal diseases was not sustained. Towards the end of the 19th century, the profession entered upon a period marked by a complete indifference on the part of certain Government Departments to the needs of veterinary research, a period which came to a close with the creation of the Development Commissioners in 1910. From about 1890 to 1910, official support was limited to the appointment of certain Departmental Commissions and Committees such as those which dealt with tuberculosis, bovine fever and contagious abortion. During this time the main advances in this country were made at the Royal Veterinary College where it might be said the torch of veterinary research was kept alive. Fortunately, the profession had within its ranks an eminent scientist in the person of Sir J. M'Fadyean. In spite of severe financial stringencies he and his younger colleagues completed an important series of investigations ranging over glanders, tuberculosis, contagious abortion, African horse sickness, Johne's disease, and so on. In these critical times, M'Fadyean's influence on the Council of the R.C.V.S. was powerful. Largely at his instigation, but with the backing of many of his fellow Councillors, the educational responsibilities of the R.C.V.S. were not neglected. It was recognised that the College was concerned not only with the examination of prospective graduates for the home country but had certain obligations to the Dominions and Colonies which looked to Great Britain for a steady supply of suitable well-trained recruits for the rapidly expanding field of disease control under conditions substantially different from those which obtain in this country. In the curriculum—and in particular that part of it which deals with pathology and bacteriology, including protozoology—a strong emphasis has been laid on adequate instruction on tropical and semi-tropical diseases. It is a legitimate source of pride that the veterinary colleges, stimulated through the import of the examination system of the R.C.V.S., have produced a series of brilliant colonial administrators who have also initiated far-reaching investigations of the utmost importance. At the present moment, the extensive and successful veterinary services operating in all parts of the Empire owe much to the foresight and skill of the early pioneers who received their training in this country.

The recognition by a Government Department that the neglect of veterinary research was a matter of prime importance to the State dates from the creation of the Development Commissioners. We read that in 1910 the Board of Agriculture's veterinary laboratory received the very modest grant of £3,000 : thenceforth each year increasing sums were allocated to different institutions and individual workers. A severe outbreak of foot-and-mouth disease focussed attention on the need for intensive research on the means whereby the virus is introduced and the methods of its spread : in consequence, a committee was appointed which recommended (1) that Government Departments concerned with diseases of animals should be provided with the necessary laboratories and staffs ; (2) annual sums should be set aside to encourage research in veterinary institutes ; (3) a Professorship of Comparative Pathology should be created to foster more abstract researches having no immediate reference to administrative work. As is well known, the outbreak of war in 1914 prevented the implementation of the last-mentioned recommendation. During this same period it was decided to transfer the Board's veterinary laboratories to New Haw, although the buildings were not completed until 1917. In the meantime grants were made for investigation into contagious abortion, joint-ill in young stock, tuberculosis, scrapie, Johne's disease, and so on.

After the end of hostilities, the resumption of normal conditions led to the appointment of a second advisory committee which in 1922 reported on " The facilities for research and how they could be improved." The committee pointed out that the lack of progress in veterinary as compared with human medicine was due to the fact that human investigators had enjoyed facilities denied to investigators into animal diseases. It remarked that students of animal diseases had received relatively small support from public funds and that private benefactions had been surprisingly few. The gradual creation of a cadre of research workers with definite prospects of pay, tenure, promotion, etc., was regarded as an essential step to secure recruitment of the right type of worker. It may here be noted that the R.C.V.S. has frequently pressed the claims for a more liberal treatment of investigators both at home and abroad, and has ever been prepared to bring to the notice of Government Departments the legitimate claims of its members. The means to implement the suggestions made by this committee were furnished by the release of £850,000, part of the sum set free by the Corn Production (Repeal) Act of 1922. Parliament decided that this money voted for the benefit of the farming community should be used to improve existing facilities for research and its distribution was placed in the hands of the Development Commissioners. In 1923, a Professorship of Animal Pathology was created in Cambridge followed by the formation of the Institute of Animal Pathology. Sums of money were allocated in quick succession for the Research Institute of the R.C.V.S. (1924) and the first appointment of a veterinary advisory officer, the Institute of Agricultural Parasitology (1925), the Animal Diseases Research Association at Moredun (1927) and improved facilities for foot-and-mouth research at Pirbright (1929). Since 1931 the co-ordination of research has been vested in the recently appointed Agricultural Research Council.

VIII. General, or Private, Veterinary Practice

It is not for want of appreciation of the relative merits of the practitioners that we have postponed dealing with them to this stage. Even though before the establishment of the veterinary schools, ordinary practice had fallen into the hands of the farriers and cow leeches who were notorious for their ignorance and brutality, a few exceptional men appeared from time to time. Thus we have distinguished authority (W. Rieck) state that a British practitioner, Michael Harward (1643-73), who practised first in Cheshire and then in Ireland, deserves from the work he published on bovine obstetrics to be called " The Father of Cattle Practice." Remarkable work on parturition was afterwards also recorded, in 1797, by Joseph Downing, the Stourbridge country practitioner and, in 1807,* by Edward Skellett, the Marylebone practitioner. James Clark, of Edinburgh, was outstanding during the period immediately before the opening of the schools, and laid down rules of hygiene dealing with ventilation and feeding which were greatly in advance of all current practice. At the time of the opening of the schools the profession had a galaxy of brilliant practitioners, such as Moorcroft (1767-1825), Bracy Clark (1771-1860), and Delabere Blaine (1770-1845)—" The Father of Canine Pathology," and Youatt's mentor and partner. The manner in which Coleman conducted the London College after he became its head discouraged the entry of men of high culture, of the type which also proved eminently successful in practice, from entering the College. The names of William Percivall (1792-1854) and William Youatt (1776-1847) are the brilliant exceptions. Several, however, showed a high degree of skill in practice, such as James Turner (—-1860) of Croydon, (the Thomas Turner, the first President of the R.C.V.S.), who first described navicular disease and sesamoiditis in the horse, W. C. Spooner (1809-85), of Southampton, William Haycock (1818-72), E. A. Friend (1800-66), of Liverpool (who recommended farms for the teaching of cattle practice and as experimental feeding establishments as far back as 1839), and others, while W. Karkeek (1803-58), of Truro, showed remarkable learning for the time. Our professional standing was impressed on the public particularly by the rigid integrity of the Fields and several others at an age when horse dealing was subject to widespread corrupt practices.

On this occasion, however, it is for their work in obtaining the

* See Smith's *Hist. Vet. Lit.* 1. 323; 2. 227; 3. 119.

Charter of 1844 which first put us on a professional footing that they deserve (as, indeed, they do for all time) the gratitude of the whole profession. It is not in vain that they have been called " the backbone of the profession."*

To redress the wrong suffered through their exclusion entirely from the affairs of the London College and from the examination of students, and conscious of the pressing need for professional recognition, it was they who combined in the movement, from 1840 onwards, in the face of great difficulties, to obtain the Charter of 1844.†

At the meeting of the veterinary profession, " summoned by public advertisement," and held at the Freemasons' Tavern, July 8th, 1829 (*Veterinarian*. (1829.) **2.** 303), one of the members, James Child, in the course of his speech, said, " . . . I, too, have a College diploma ; but I attach no value to it. Whatever reputation I may have is not founded on it. Perhaps I shall never look at it again ; and I sometimes almost despise it, when I see it bestowed on so many incompetent persons. I know that the College diploma is ridiculed ; I have heard it too often and too painfully ; but why is this ? because the College is a mere private institution and not a chartered body. Until it is a chartered body the veterinary surgeon must stand or fall by his own professional talent. Nothing can be done effectually until, as a body, we apply for a Charter. To a military man only, the diploma is of some value, because without it he could not obtain his commission. Every effort, and every plan, except to reform ourselves, and prepare ourselves for a Charter, would only expose us to ridicule."

Priority in suggesting a Charter, therefore, so far as we can trace, must go to James Child ; no one else at that time seemed to have conceived the idea of petitioning for a Charter as the only solution to their grievances, and no one appeared to be in sympathy with the idea, until next year (*Veterinarian*. (1830.) **3.** 553) there was published a letter headed, " On the establishment of a College of Veterinary Surgeons " by W. Simpson, of Lancaster, dated September 2nd, 1930, which includes the following statement, " I have long thought that the most direct road to the improvement of our profession, and, consequently, the advancement of its respectibility, was to establish a college of veterinary surgeons, chartered by Government, and similar in its principles to its sister institution, the college of human surgeons. Let the examining committee of that college alone have the power and authority to confer upon the student a certificate or diploma ; for they only, as veterinary surgeons, can form an adequate judgment of the qualifications of each candidate. . . ."

This W. Simpson, of Lancaster, seems to have been a young man of merit, because we note that he was awarded first prize, for an essay on the spinal cord, at the distribution of prizes at the termination of the first course of lectures given by Youatt at the London University (New University College) in 1831 (*Veterinarian*. (1831.) **4.** 380). He may have been inspired therefore by Youatt to write his letter.

As stated in the introductory passages, several outstanding names contributed afterwards to the Charter movement, all of whom were those of men either in private practice or in the Army, the outstanding genius of the movement being Thomas Walton Mayer, then in partnership with his father, Thomas Mayer, as a practitioner at Newcastle-under-Lyne. The staffs at the two Colleges played a role that was merely acquiescent, afterwards, as it were, regretting their acquiescence, and no support was forthcoming from without the profession itself. Hence, it is no exaggeration to say that it is the practitioners who have been the real " backbone of the profession."

There seems to have been some confusion regarding the use of the term Royal College of Veterinary Surgeons for the London Veterinary College at a very early stage, because in a leader entitled " Unqualified Practice " written in *The Veterinarian* (1831. **4.** 583) the use in an advertisement of the term " Member of the Royal College of Veterinary Surgeons " by a groom who had spent four months in Coleman's College, is deprecated. Not, however, till March 1st, 1834, is any explicit reference made editorially in *The Veterinarian* (**7.** 159) to the formation of a corporate body. The editor (Youatt) then writes, " The method in which this [*i.e.*, the proposed reforms] is to be accomplished, and in which alone it can be truly and honestly so, is by the legal establishment of a body similar to the corporations of physicians, surgeons, and apothecaries : the original members of which shall be selected from the profession generally (not perhaps excluding the conductors of certain schools, but altogether independent of them) ; and where veterinary men shall decide on the competence of veterinary students, and defend the rights of veterinary practitioners, and without a diploma from whom no one shall hereafter be permitted to commence practice.

" This will, ere long, be claimed and granted ; but then all *exclusive privilege* must merge in the general interest."

These historic passages are worthy of reproduction because they show clearly how the idea of the Charter germinated and what were the motives for it. There can be no doubt that credit must be given wholly to the general practitioners for it.

Later on, it was they, too, who organised the movement which brought about eventually the smoothing out of the difficulties in the working of the Charter caused very largely by the resistance of the two schools both at Edinburgh and London to comply with the intentions of the Charter, as well as by the fact that the Charter had not given to the members of the profession the legal title desired. Action was taken by the summoning of the first British Veterinary Conference, in which the most active part was taken by George Boddington, of Cardiff, associated particularly with the practitioners of the Manchester area, among whom Thomas Greaves and John Lawson were outstanding.*

George Fleming (1833-1901) was then a young man who had been employed as a youth in John Lawson's forge, but attracting the notice of his employer he was sent for training to Dick's College, and then entered the army at 22 years of age, proceeding at once to the Crimea, serving later in China, and returning home for service in 1864. He would be 34 years of age therefore when he again came into close touch with his old employer, who presided at the historic 1867 conference, and from that moment he made it his main object to establish the profession on a secure basis. He founded *The Veterinary Journal* in 1875, which established the desired contact with the practitioners particularly in the movement, and his ready pen and versatile mind produced a mass of literature, mainly drawn from Continental sources, for their information. " It is not generally known that he financed from his own pocket the Veterinary Surgeons Act of 1881, the obtaining of which has been regarded by many as his greatest service to the profession.†

Hence, again, the reinforcement and stabilisation of the profession can be traced to the vitality of its independent and especially its practising members, working together in conference for the promotion of those movements which have given it the standing which it has to-day.

On this present centenary occasion, it seemed that what was most particularly desirable to commemorate it was a faithful impression of the state which practice has reached to-day. This seemed desirable for many reasons. First, for the guidance of the newer generation it was thought well to collect the impressions of a wide variety of successful practitioners engaged in different classes of practice, in different parts of the country, and with varying lengths of experience. Although a common thread of experience can certainly be traced in their narratives, what will, we believe, also emerge is that there is considerable variety, and the younger graduate and the student can thereby make up his own mind as to the prospects which will suit best his own inclination. Secondly, the varied picture presented by these narratives indicates clearly that there exists a demand for the veterinary surgeon in private practice to-day far exceeding what a large section of the public suspect. The nature of those calls for veterinary attention can only be adequately expressed by those who have daily to respond to them. Nearly all these narratives have therefore been written down in their own words by extremely busy men or women, and care has been taken to respect the language they have chosen to express themselves. A mere review or condensed account of these experiences would lose vividness and almost assuredly fail to convey to the reader a true picture. Thirdly, from the standpoint of the future historian it is a duty to hand down to posterity a faithful record of practice at the centenary of the profession. When the next centenary is reached, and the " backbone " of the profession has become further strengthened, we hope, through continual subsistence on what can be traced to have given it already its strength, namely its corporate structure, as well as its competence, the materials here published will be specially valuable. Fourthly, the different narratives indicate how within living memory the veterinary profession as a corporate body has been able to readjust itself successfully to changing demands. Some of these changes, such as the change caused by the transition from the horse to the mechanical age and that caused by the agricultural depression after the last war, have been drastic. Fifthly, the narratives indicate the extent to which scientific advances have impinged upon general practice. This will be found to be very marked during this relatively short period of history. Yet all the same there will be found to be a foundation which is conveyed by the very comprehensive term " art " which is the legacy of the centuries

* Writing on W. C. Spooner, of Southampton, Smith (*Hist. Vet. Lit.* **4.** 35) says, " He was typical of that small but most valuable class of men determined to submit to the test of practical experience the dogmas taught by Coleman and to discard all that did not square with practical experience. It was this small group, the good general practitioners, the backbone of the profession, who made the profession for us. For long years these men worked not only to correct Coleman's errors, but to gather information about diseases of animals other than the horse, of which, when turned loose from the London School, they had been entirely ignorant."

† " The proposal of a Charter of Incorporation appears to have originated," says Smith, " with him (Thomas Turner (1800-59), the brother of James Turner) in consequence of a judge refusing to award him the fee of an expert witness on the ground that he did not belong to a recognised profession." (See also *Trans. Vet. Med. Assoc.* 1842-43.) Vol. II). Turner was elected first President R.C.V.S. (*Hist. Vet. Lit.* **4.** 13). Smith's statement is not strictly true here, for Turner's idea had been anticipated.

* See *The Veterinarian* (1867), especially the article by T. W. Mayer, " The Charter, its history and mistakes."

† Smith, *Hist. R.A.V.C.*, p. 177.

and which is also the measure of the practitioner's personal experience and aptitude, uninfluenced by the impact of modern science.

In particular, lastly, we would draw attention to the very real importance of certain branches of practice such as that branch which deals with the smaller animals. Quite apart from the fact that it offers fairly lucrative employment to the veterinary graduate, it is, we are bound to realise, in the mind of the ordinary public, a form of service for which there is a widespread demand and one which requires a high degree of competence, especially in those surgical and other techniques which demand great manipulative skill. It is, we believe, on the appreciation of the public generally that the profession views this class of work seriously, that we can meet any challenge made by the unenlightened that it can be undertaken without a full and proper veterinary professional training.

The narratives have been divided into subsections for convenience. The first one opens with two from men held high in the esteem and affection of the profession, both hailing, we may say, from well north of the Tweed. These will give some reminiscences from their long experience in practice.

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(a) Some Early Reminiscences of Veterinary Practice

I qualified at Glasgow in July, 1886. In those days the final year had examiners in horse and cattle pathology. We were examined by such men as Duguid, Robertson (Greenock), Fleming, Vaughan, Pritchard, Banham, Dun, Walters, Taylor, etc. The examiners in those days were great "toffs" appearing in "toppers" with morning or frock coats and shaped trousers. I must say they did not treat the students with the same courtesy as do the examiners of the present day. They had no hesitation in calling you a fool with an adjective in front if you did not answer right. Fleming would examine every student on the pneumogastric nerve. He pretended to be an expert on roaring. There were no written papers then and very few students were examined on diseases of cattle. It is my opinion that at that time more practical men qualified than at present, the majority of the students coming from the agricultural class.

The first assistantship I got was in Paisley where there was a big horse practice. Influenza and strangles were rife, and drenching, in spite of pharyngitis and laryngitis, was the treatment. Every window and door had to be kept closed, with the result that the poor animal was half suffocated. To-day they would have survived without much treatment—in the open air. Colic or impaction of the bowel was very common and the colic draught always contained opii tinct.: the very thing to stop peristalsis. They also received either a bottle of linseed oil or an aloes ball, so that the animal was ill for days instead of hours as now, when all that is required is an hypodermic injection of one of the choline preparations.

I then went to Nantwich, Cheshire. Here calving and eversion of the uterus was a daily occurrence. Milk fever was common but was not met with so frequently as it is to-day. I may say that all the milk fever cases either died or were eventually destroyed, as they never got up. Black-leg was very common in Cheshire and the preventative then was a seton in the dewlap. How it acted I do not know. "Hoose" was extremely common and we used to make affected calves inhale iodine on a hot brick placed in a sack. I saw plenty of Johne's disease there but at that time the causal organism was not known.

The principal did all the examinations for soundness: we often had such men in consultation *re* hunters as Locke, Lawson, Taylor and Greaves-Wolstenholme—all of Manchester. These were all splendid men of their day. In Scotland Walley, Dewar, Williams, Robb and McCall, of Glasgow, were the most outstanding men. Besides those mentioned, I knew well Dollar, Sheather, Hunting, John Malcolm and MacQueen. What men, if they had been alive to-day!

Chloroform and local anaesthetics were unknown in veterinary practice when I commenced, and many cruel operations were performed.

Practice was hard in those days—driving all day and half the night in all weathers in gigs and dogcarts. The present-day graduate does not know what hard work and exposure is. Clients were not then so well informed in veterinary science: the agricultural and other papers have taught them a lot. I think it is easier to-day to explain things to the client and to satisfy him.

The only magazine published at that time was *The Veterinarian*. While many of the articles it contained were quite good, many of the theories expounded therein are now exploded. The results of treatment to-day are much more successful. Especially has there been a great advance in the knowledge of the diseases of sheep, with sera and vaccines for lamb dysentery, louping-ill and braxy, and phenothiazine for parasitic troubles. Mastitis was not so common in those days and yet the premises were all very insanitary. The reason, I think, is the present practice of breeding for high milk yields, so that the udder has not the same powers of resistance.

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Some Further Early Reminiscences of Veterinary Practice

In the early nineteenth century veterinary and human medicine had not entirely escaped the influence of popular superstitions and the evil spirits or "evil eye" played a part in the aetiology of disease of both animals and people, especially in remote parts of the country.

Many farmers believed that the "evil eye" was a common cause of disease and it was a very grave offence for a visitor to a farm a hundred years ago to admire any of the animals. Forty years ago, when I was visiting the farm of an old man, I was told my patient had the "tail-ill" and that if I did not incise the tail and cause blood to flow the patient would die. At the time I was sure this was a belief held in a very small area; it was therefore with some surprise that I recently visited a farm and found a bullock with a deep incision on the under surface of the tail. Enquiries revealed that the incision had been made by an itinerant molecatcher from the North of England and when I asked him why he had made the incision he replied that it was to "take the ting out of the belly."

Each period in the history of veterinary medicine, like each period in the life of man, has had worries and anxieties and, looking to the limited training of those early days, one must admire the achievements in eliminating from these islands rinderpest and bovine pleuro-pneumonia.

In the first half of the last century the horse enjoyed the greatest period in his history and played a most important part in material progress and in the provision of pleasure. His mobility and the constant traffic in replenishing supplies of animals created many problems for the veterinarian throughout the whole country. The veterinary profession naturally gave prior attention to his ailments which arose as a result of his work and the ease with which he spread contagious diseases. The carriage horse had his lameness, as also had the draught animal and they all by their mobility came in contact with infection which they brought back to their home stud with disastrous effect. The cob which took the farmer to his weekly market frequently returned with the beginning of an attack of strangles or one of the influenzas.

The coming of the internal combustion engine has had a marked effect on the type of practice pursued by our profession in rural Scotland—whereas at one time lameness was frequently met with, it is now rare apart from injuries to feet and legs. Acute disturbances of the stomach and bowels are now rare compared with 50 years ago and several factors have accounted for this improvement. The fast work has gone both for driving horses and vanners—likewise the heavy haulage work in rural areas at least, is now overtaken by motors and tractors, so to-day torsion of the bowel is more rare. Then in the first half of the century, on Scottish farms at least, there was a practice of feeding mashes of cooked food to the farm horse at night. The farmers believed in its health preserving properties, but when changes in farm management caused a cessation of this style of feeding a marked fall in the incidence of colics, many of which were fatal, occurred. To-day rupture of the horse's stomach is seldom met with and the fatal torsion of the large colon is much less common. Possibly this was a result of the reduction in heavy draught work amongst farm horses and carting horses as a result of the advent of the tractor and motor lorry.

While these beneficial changes were slowly evolving the veterinary profession in central and northern Scotland somewhat suddenly realised that a more fatal disease of horses, apparently located in the abdominal cavity, had made its appearance. Because this affliction mostly occurred at pasture it received the title "Grass Sickness" or "Grass Disease." It was a most arresting disease for, while most of the cases were fatal, the signs of distress in some cases were very slight until the terminal collapse and the *post-mortem* examination showed that this fatal disease of a few days' duration had produced little or no organic alteration of structure. The profession in its history has experienced other obscure diseases and solved them; I have no doubt our workers will be able to render considerable help in this also.

When we turn our attention to the diseases of cattle we note how changing conditions have altered the type of disease met with, and in this area, while no doubt at one time certain ailments such as bovine haemoglobinuria or red water, and blackquarter were very prevalent, to-day they are only met with occasionally. This is due to the higher standard of farming as shown by the greater use of lime and better drainage and also better nutrition. In early days the remedies for red water were many but none too successful.

To-day the newer remedies such as "Acaprin," etc., give much better results. Its companion disease, blackquarter, is also rare except on a few badly drained farms. That early remedy, the seton, was the recognised means of prevention and while it no doubt had some prophylactic action by permitting limited infection, I am inclined to believe that originally it would be used to keep away the bad spirits. To-day more faith is reposed in the modern vaccines.

In pre-war days, under modern conditions of farming, when considerable quantities of imported feeding-stuffs were used, anthrax was a frequent occurrence. It is now handled with greater care than in former days when many of the older men regularly made *post-mortem* examinations, looking for an enlarged spleen. Our modern methods are certainly safer.

Early veterinary literature used to give much space to a group of diseases loosely termed "Staggers in Cattle." This term included a number of varying conditions, which now have been more accurately defined as a result of a clearer perception of a more likely aetiology. Tetany was one condition, lead poisoning was another, and while the latter condition is to-day rare compared with its incidence 60 years ago, the other would appear to be much more prevalent.

I think anyone who has studied the diseases of cows over a long period would agree that the conditions due to some metabolic or bio-chemical disturbance have increased in the last 30 years; fortunately we are in a better position to treat them successfully owing to the greater development of research. A notable member of this group is the old parturient apoplexy or milk fever of cows and I think agriculture should be eternally grateful to Schmidt, of Kolding, and later to Dryerre and Greig, for the new orientation of thought regarding it, especially in the development of the very successful therapeutics. Tetany is one of those interesting conditions about which we know just a little, and while it was undoubtedly known for a long time we have no records showing that it might behave almost like an epidemic with cases occurring on many farms in an area during the same week. There is some evidence to show that this condition arises from faulty nutrition.

In the part of Scotland where the writer works it would have appeared most unusual to call a veterinary surgeon to cases of illness in sheep, but to-day farmers realise that we can help them very much. No doubt a great deal of this is due to the excellent work of the Moredun Research Station and workers in other areas. By their work the sum of our knowledge on such widely-spread conditions as braxy, louping-ill, lamb-dysentery and helminthiasis has increased very considerably and to-day we are in a position to give better advice than in the early years of the past century.

The record of the past hundred years in veterinary work is one of progress and much of that progress we owe to our research workers. The lesson to be learned is that as we start another century we must encourage more research and it must also be closely associated with the teaching of the prospective practitioner.

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(b) Veterinary Practice in Different Localities

Town Practice in a Lancashire Industrial Area

The present generation of veterinary surgeons have little conception of the changed conditions of private practice, especially those in towns and cities with populations exceeding 80,000, as compared with the conditions existing shortly before the Great War, 1914-18. These changed conditions were not directly attributable to the war but to the development of the internal combustion engine and its use as a propelling power in road vehicles, which happened to coincide with the war period. With the advent of the motor vehicle, horses, which up to this time had been the mainstay of veterinary practice in towns and cities, were gradually replaced. First the gentleman with his carriage and pair replaced these with a private motor car, then firms who used heavy horses for the delivery of goods gradually replaced three or four horses with a heavy motor goods vehicle and later the small tradesman with one or two light horses replaced these with a light motor van. These changes very seriously affected the scope of the work of the town practitioner, so much so that where at one time there was sufficient work for three or four veterinary surgeons, by the end of 1925 there was barely sufficient horse practice to keep one surgeon fully occupied.

It may seem strange, but the changed conditions under which horses (what few there are left) now work have had the effect of almost eliminating many of the diseased conditions from which they suffered in pre-motor days. How well those of us of the pre-1914 days remember the cases of acute congestion of the lungs and spasm of the diaphragm which so frequently occurred in hard-driven coach, wagonette or char-a-banc horses, also cases of mudrash due in large measure to the limestone roads of those days with their inches of mud in winter time and clouds of dust in summer. The outbreaks of pink eye, strangles, influenza and pneumonia which occurred in large stables were a constant source of anxiety not only to the veterinary surgeon but also to the owner of the stud. In these outbreaks of disease the veterinary surgeon had the opportunity of showing the results of his professional training, for if he was not quick in controlling the sources of infection the disease spread with alarming rapidity not only through the particular stud but amongst the horses in the whole town. Colic cases were much more common then than they are now, due in large measure to the long hours worked, irregular times of feeding, etc.

Inevitably the veterinary surgeon of to-day has been compelled to look to the motor car as a means of transport; this is not without its sadness, for what could be more appropriate to a veterinary surgeon's calling than that he should visit his patients in the smartest turn-out of the town? Perhaps a gig or a ralli with a fast hackney cob, or a governess car with a skewbald or piebald horse whose white markings were white and not a dirty brown from manurial stainings. Was not such a picture a quiet and legitimate advertisement for the veterinary surgeon?

With the decline of the horse the town practitioner had to look elsewhere for his livelihood and it is to his everlasting credit that he was able to weather the storm and emerge victorious to carry on the great traditions of the veterinary profession since its foundation in 1844.

It has often been said that the private practitioner is the backbone of the profession. If there is one part of the vertebral column more important than another then that part should be assigned to the town and city practitioner of the 1910-25 period.

To make amends for the loss of horse practice the town veterinarian had to pay much more attention to small-animal practice than he had done previously. He had to alter his premises so that what was formerly stable and coach accommodation became kennels for small animals and garage room for his own cars.

Fortunately, about this time the public became more conscious of their obligations to their pets and when illness overtook them they sought the advice of a veterinary surgeon. It is within the writer's recollection that to have a dog or a cat to attend to was of rare occurrence, whilst now one surgeon is fully employed attending to small animals.

Formerly town practitioners did only a small amount of agricultural work in the immediate outskirts of the town or city. In recent years they have developed this branch of practice and go much further afield. Great credit is due to the older practitioner in that he has been able to develop, so successfully, these branches of veterinary work, for in his college days little teaching was given in small-animal and cattle practice. He had to teach himself in the hard school of practical experience. The present generation of veterinary surgeons are well equipped by the teaching obtained at the various colleges to carry on this great work. It is not inappropriate to mention that the present standard of teaching has been largely influenced by the R.C.V.S. who are constantly revising the curriculum to meet the altered needs of the profession. Is it too much to hope that the R.C.V.S. will be allowed to continue with the destinies of the profession which they have so successfully done with advantage to the public since 1844?

To the veterinarian private practice means hard work, day and night, week in, week out. It demands character, enthusiasm, ability and self sacrifice. Veterinary practice is to a large extent an economic proposition to those who employ us; fortunes are seldom made, there is no superannuation for the aged and infirm, but in spite of all this it has its compensations. The work is interesting and varied. It is an outdoor healthy life and presents unlimited scope for the exercise of tact, experiment and progress. These considerations outweigh all its disadvantages.

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Veterinary Practice in a Northern County, mainly Industrial

The industrial districts of the West Riding of Yorkshire do not lend themselves to agriculture in its widest sense. Not here are the broad acres with their ploughed furrows stretching into the distance or the fertile plains. The bleak hill sides abutting the moorlands and the narrow valleys housing the industrial manufactures, of necessity break up the land into the small farm holding type. The very nature of the land and its pall of industrial smoke do not encourage arable farming or the breeding of young stock. The towns and cities in the valleys offer a ready market for the sale of milk, and it is natural that the small farmer in the past concerned himself primarily with milk production.

In times of peace, when imported cattle foods were easily obtainable, it was simpler to buy these foods rather than attempt to grow them,

and the common farming practice was to buy young heifers in milk and sell them to the butcher after their first or second lactation. To "milk and feed" was the usual practice, and breeding and other major difficulties were solved quite economically by the butcher. Consequently, three decades ago, the practising veterinary surgeon was employed chiefly for the more serious and urgent of the many cattle diseases.

In the towns and cities at that period, horse transport offered its greatest opportunities. The usual practice with the larger studs of horses was for the veterinary surgeon to be employed on a contract basis of an annual fixed fee per horse. This would include attendance, treatment and medicine, and advice as to stable management, feeding, etc. Indeed, this system was the forerunner of the present-day scheme for the control of certain diseases in dairy cattle.

The practitioner, in those days, undoubtedly was brought into very intimate contact with horse owners, and there is no doubt that by his attendance and advice there was a very considerable improvement in the management of horses and reduction in the incidence of respiratory and digestive complaints and of faulty shoeing.

With the period of mechanisation, and then the comparative cheapness of mass-produced motor vehicles, the horse fell very rapidly into disuse in the urban centres. In addition, after the last war, the introduction of the eight-hour day produced a type of workman with his eye on the clock for the cessation of work. The horse cannot be groomed, fed and made comfortable for the night in a matter of a few minutes. The driver's pride in his horse was lost, and this unsatisfactory condition of things induced many horse owners to go over to mechanised transport.

With a comparatively sudden loss of income, the town and city practitioner turned to the small-animal population and found it provided remunerative work. The dog and cat owners soon appreciated careful and skilled attention, and this work can be of absorbing interest. The social contacts that the practitioner makes in this type of practice are valuable and interesting. That small-animal practice in urban areas will always be of outstanding value to the practitioner is undisputed and it offers a medium for the display of skill and observation that will always appeal to many.

In the post-war years, the veterinary surgeon found that he was able to play his part in the drive that was then being made towards cleaner milk production. By this means he was able to demonstrate his ability to take his rightful part in public health matters. Those practising in the larger industrial areas, where milk was one of the chief local farm products, were able to take a greater share in this sphere than their colleagues in the rural areas, and a close contact with the health authorities of the various local authorities was undoubtedly beneficial to both.

As is well known, this inter-war period was characterised by a pronounced agricultural depression. On the other hand, science had made some important contributions towards more rational and economic methods of feeding cattle, in addition to those of improved housing of cattle and the handling of dairy products.

Veterinary science, however, was not invited at this stage to take any notable part in the reduction of diseases so rife in many dairy herds. The farmer's disinclination to incur expenses in the way of fees, and his attitude of melancholy acceptance of his losses did not provide any great forward development in veterinary work in the field. It has taken this war with its rigours of rationing of cattle feeding stuffs, and the impracticability of disposing of the unprofitable cow, to make the stock owner face up to his problems. Gone are the days when to "milk and feed" were the easy and profitable ways. The milk cow is no longer a temporary passenger in the herd, but must be made to breed and give successive lactation periods. With this retention in herds of older cows, the diseases of infertility and mastitis had to be attacked in some way. Abortion had to be controlled or financial disaster was the alternative.

It was at this stage that the N.V.M.A. Scheme was launched for the control of four major diseases of dairy cattle. Though only a minority have entered the scheme, very many more have availed themselves of the knowledge that the veterinary surgeon is able to-day to apply himself to the control of these diseases, and at the very least it has aroused many stock owners from their apathy and informed them that something can be done for their benefit.

To-day, even in the industrial areas of the West Riding the countryside has changed. The ploughing-up policy is helping to produce crops from the unwilling soil, and although this is a war-time measure which undoubtedly will cease in normal days, yet it has shown that many old methods must be forgotten and that science has given proof of her ability to help agriculture forward to better things.

Prosperous and advancing veterinary science is dependent upon a prosperous era in agriculture, and if the Government promise of continued help is implemented in their long-term agricultural policy, then an ever-widening field is open to veterinary science and an attraction provided to a good type of graduate to the profession. In urban areas, the horse is destined to play only a minor part, but veterinary practice is no longer kept within a small radius from one's surgery, and the work of to-day and in the future will call upon our energies and skill in increasing degree.

It is one's earnest hope, to this end, that the quality of the training of the future graduate will not be lessened in the drive for the speeding up of the qualification of more and more into our professional ranks.

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Veterinary Practice in a Northern County, mainly Mixed

The picturesque veterinarian with old-world manners and leisure has gone and left us respecting his prestige, skill and powers of observation; he has given place to a more scientifically trained, although perhaps less human, type, who in his turn realises that private veterinary practice is an art as well as a science. This change of personnel, the advent of the internal combustion engine for transport and farm work, the corresponding decline in the importance of the horse, increased interest in the importance of flocks and herds for milk, meat and egg production, increase in knowledge of hygiene, dietetics and diseases and the incorporation of practitioners in schemes of control of scheduled diseases, have been the main causes influencing the progress of veterinary practice in the North of England.

By adopting the motor car as his form of transport, the present-day veterinary surgeon is able to cover a wider area and attend to a wider clientele than his predecessor, with the result that practices are larger in turnover and that those with limited scope have lapsed. By his client adopting motor traction, the numbers of commercial horses in cities and large towns have dwindled considerably so that many of these practices have faded out with the passing of the principals. The farm is much less dependent on the horse since the working of the land can be almost entirely mechanised. The harness horse has almost entirely disappeared.

In spite of these doors closing on veterinary practice, other doors or opportunities of usefulness have opened, particularly in connection with milk production. Since 1938, when the Agriculture Act was introduced, official work under the Ministry of Agriculture has become an important part of private practice; its volume has had a stabilising influence on the location of practices in some areas. Where clinical work was formerly thin on the ground, the addition of the official appointment has assured the permanent residence of a practitioner in the area. Another effect of this introduction has been that the confidence which already existed between client and practitioner has increased, although the official must always be a man just a little apart. A further effect has been that the earlier happy-go-lucky manner of the practitioner has become a more serious one.

The controversy between the proposed working of the Agriculture Act by a totally whole-time staff or by incorporation of the practitioner in it was very severe, and the ultimate decision to adopt the latter course created a landmark in the history of private practice. Most practitioners received the decision with satisfaction whilst others realised that if they did not join in, their practices might suffer encroachment.

Increased interest in livestock, their products and knowledge of their diseases has affected both client and practitioner. The client of to-day has the results of research readily available to him, and whilst a few stick to empirical remedies, most apply those results, where they can be interpreted, either alone or by the practitioner. Where further investigation is necessary before they can be applied, the practitioner again frequently functions and beyond and through him is the chain of experts which makes up the Veterinary Investigation Service. The practitioner of to-day has been enabled to be in a position of enhanced usefulness to the livestock owner, on account of his increased knowledge of diseases, organismal, parasitic and deficiency, of the availability of more specific sera, vaccines and drugs, of anaesthesia and general hygiene; his status in the prevention and treatment of disease has been advanced.

Whilst the modern outlook aims more at the prevention of disease in studs, flocks and herds than at treatment in the individual, a large proportion of the practitioner's time is occupied in the latter sphere, where there is still scope for ingenuity, skill and non-specific remedies. The established research centres and the Regional Veterinary Investigation Centres have contributed to these increases of knowledge, for which the Northern practitioner is not lacking in appreciation, and in return he is willing to do his share in carrying out clinical trials, the results of which may add to existing knowledge.

Horse Practice.—Of the horses engaged in this country's coal mining industry, approximately one-third are so engaged in the North of England. Under present conditions, preventable diseases and accidents amongst them are reduced to a minimum; dieting has

been studied scientifically, with the result that horses generally are in good bodily condition, particularly so if weedy and nervous animals are rejected at the time of purchase. Very little abnormal wear and tear is seen in these horses in the first few years in the pits; that seen later is consistent with age and service. Chronic laminitis is less common, due to better conditioning during their first six months below ground. Glanders is now extinct. Equine town practice is almost confined to railway companies, corporations, millers, breweries, co-operative societies and firms with railway sidings with shunting operations to perform.

There is a considerable nucleus of thoroughbred horses at most of the training and breeding centres in the area, from which will grow the numbers to meet post-war requirements. Racing and racing practice is likely to come into its own again when the present war is over.

Horses for hunting and hacking are under a cloud at the moment, but whilst the former will probably not return to their former extent, it is likely that the latter will do so. The farm horse cannot be dispensed with entirely; in fact many small farms which are mechanised for land tillage still keep more than half their original number of horses for carting and special work. Usually they live cheaply and are not so well cared for as formerly; their feet in particular are more neglected, firstly because road work is limited and many are never shod and secondly because blacksmiths have been starved from the countryside. Timber haulage and the tow path still employ horses to a considerable extent.

Few major diseases of the horse remain to the practitioner. Parasitic diseases of the intestines and blood vessels are probably the largest item in present-day horse practice. Symbiotic mange is also common and frequently neglected. The use of anaesthetics, denied to earlier generations, and the advent of sulphonamides have been two landmarks in horse practice. The diagnosis and treatment of lameness, colics and digestive disorders, examination for soundness, castration and docking still have a prominent place in private practice. Respiratory diseases are now uncommon in north country horses, although susceptibility to such a disease as influenza must be very high, should it be introduced.

Canine practice in the cities and large towns is still of considerable consequence. Dogs of high value and packs of hounds are less in evidence, but the household pet owner is still numerically strong and maintains canine practice at a high level of occupation.

As most practices are of a mixed nature, canine work is usually considered of secondary importance, but where the veterinary surgeon has specialised to some extent in this class of work, his services are in great demand. Most industrial areas have their greyhound and whippet racing tracks, and the dog owners, though usually persons of modest means, frequently seek professional advice.

Scattered over the area is an adequate number of canine surgeons able to undertake major operations and consultations.

Cattle practice has become the major employment of the majority of northern practitioners. Here the tendency is to aim at the health of the herd rather than the requirement of the individual. Panel "A" appointment has given the practitioner a hand in the fight against tuberculosis, in the form of tuberculin testing, administration of the Tuberculosis Order and the routine inspection of herds. The realisation that three other major diseases, contagious abortion, mastitis and sterility, are the main deterrents to milk production, has caused owners to seek advice—separately or through the "control" scheme—on them; the advent of greater knowledge of each, together with a promising vaccine for the first, the sulphonamides for certain of the second, and an operative technique for many of the last, has opened a vast field of usefulness to the practitioner. The narrow margin of value between the dry empty cow and the newly calved one has formerly deterred the treatment of sterility in commercial herds. The usual parturition abnormalities and sequelae, functional disorders bound up with milk production and digestive disorders, still provide the northerner with much work. Accidents and surgical procedure form only a small part of cattle practice, although in the latter sphere epidural anaesthesia and the introduction of two ingenious teat instruments, have efficiently increased its scope. Organismal, dietetic and parasitic diseases still present many confusing problems in young stock.

Sheep practice, with the exception of parturitional aid, milk fever treatment and occasional individual services, resolves itself into investigation of flock losses and their treatment. The progress of time brings increasing knowledge and aid in sheep diseases. Parasitic gastritis and bronchitis, clostridial disease of adult and lamb, joint-ill, liver fluke and pregnancy toxaemia are probably the commonest diseases encountered; the last-named condition is world wide and urgently in need of solution.

The sheep population of the North of England varies in inverse proportion to the human and veterinary one, so that the investigation centres must frequently replace the private practitioner on economical grounds. The North of England has one investigation centre which has done outstanding pioneer work in connection with sheep diseases.

Pig practice.—The preventative and curative treatment of swine erysipelas probably represents the major portion of this class of practice, whilst parasitism, salmonella and pasteurella infections, dietetic and parturitional disorders combined, represent a minor portion. The Panel "A" practitioner is used for diagnostic enquiries under the Swine Fever Order.

Poultry practice.—Attendance on the individual is rare, but the practitioner stands as a medium between the flock owner and the investigation centres in case of flock losses and difficulties. Considering the official services also available, poultry diseases are dealt with as far as is economically possible.

Midst varied surroundings of broad fertile areas, crag and fell, grim slag heaps, varied pastures from the green of lakeland to the grey of the Pennines, ports and seaside resorts, grey drab industrial areas, warp and wold, woodland, moorland and plain mediocre land, with climates as varied, the Northern practitioner develops a self-reliant personality, an active wit and rarely a pendulous abdomen, in response to the comparatively hard forces of nature and the hard living of his clients; he usually lives to a ripe old age and it is extremely rare for him to retire from practice.

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Veterinary Practice in a Southern English County

To put into words the impressions gained during 19 years as a general practitioner is a truly formidable task for one who has always found the use of the pen an irksome business.

After nearly six years' service the end of 1919 found me on leave pending my discharge from the Army as the result of wounds and faced at the age of 24 with the task of embarking on a fresh career. My early association with the horse and my knowledge of his patient enduring courage under active service conditions was the deciding factor in my choice of a profession, and while I was never again to be associated with the horse lines and gun parks, the next 20 years were to find me working for the animal which has been the greatest interest of my life and given me my most happy memories.

Following an adequate but hardly distinguished academic career I was fortunate enough to obtain a post as assistant to Robert Barron, of Blandford, a great gentleman and a grand practitioner of the old school. After a long journey from the North I arrived in Dorset, a county of great natural beauty, and left the train at Blandford. This old town is beautifully situated and is typical of a quiet agricultural centre with a small population. It has in its history been destroyed by fire on several occasions, but I find it constantly delightful in spite of the fact that critics suggest that after the last time it was destroyed it was rebuilt during a period when architecture was at a low ebb.

My first day in this town fulfilled the promise of my first impressions, for waking early on a spring morning and hearing a sound I knew only too well, rushed to my bedroom window to see six hunters jogging along at exercise. For me, the day was made and I decided then and there to settle at Blandford.

In the comparatively short time I have been a member of the profession, country practice has changed considerably, and this change has been particularly striking during the past eight or ten years. When I first entered country practice it was almost entirely confined to what has been described by one of the moderns as a haphazard arrangement between practitioner and client. What did obtain of course was that if a horse was ill or lame, a difficult parturition case required skilled attention, cattle or other animals were found to be ailing, the farmer called in his veterinary surgeon to treat the particular animal or animals.

Routine examinations of herds and flocks were the exception and preventive medicine was in its infancy. The association between farmer and clinician was in all but rare cases a delightfully friendly and intimate partnership between men serving a common cause. Owing to his comparative isolation the practitioner was of necessity extremely self-reliant; investigation officers and other experts were not until recently available. This did not mean that practitioners were not abreast of the times—in most cases they were very quick to adopt any new line of treatment—but it did mean that keen clinical observation was the chief weapon in their armoury. The fact, too, that it was in many cases difficult for specimens to reach the laboratories in a suitable condition for bacteriological examination was another factor forcing the practitioner to "work out the line" himself. While one is appreciative of and grateful for the greater facilities that are available to-day, it is to be hoped it will not mean that acute clinical observation will be neglected. The practitioner not only lives in the country but is of the country; unlike his colleague the whole-time officer he usually has his roots in the county in which he lives and is a fixture for life. His recreation, exercised when time permits, usually takes the form of some country sport—tennis, village

cricket, shooting, fishing or hunting, and how welcome it is after a hard and arduous time, to snatch a day's hunting, "coffee-house" with one's friends at the meet and have a good day, eventually reaching home physically tired but immensely refreshed mentally.

What, it may be asked, are the particularly striking changes presented during recent years? I would suggest that the following are two, first the great increase in our knowledge of both curative and preventive medicine and secondly the extension of the activities of the Ministry of Agriculture. It cannot be denied that until comparatively recently our knowledge of disease in pigs, sheep and poultry was extremely scanty, but now, although much remains to be done, great gaps have filled and the veterinary surgeon is now in the position to give very considerable help not only in treating disease but to advise on the management, control and prevention of disease.

The benefits and advantages that follow the large number of excellent biological products now available are largely offset by the indiscriminate sale of these products to farmers and others. The very real dangers inseparable from the introduction on to farms of biological products by those not competent to arrive at an accurate diagnosis must be apparent, and one cannot too strongly deprecate the folly of those in authority who fail to use the powers invested in them.

The increased activities of the Ministry of Agriculture have resulted in considerable change in rural areas. Each county now possesses a number of whole-time officers and one is inclined to believe, either rightly or wrongly, that this number will increase. The duties of these officers necessitate their frequent visits to farms throughout the area and they, of course, share the duties with the part-time inspector. It therefore follows that in a rural area in which the farmers were visited by one private practitioner, they now benefit from the services of a number of veterinary surgeons, and so far as official duties are concerned, all doing the same work. While one does not suggest that this in itself is a bad thing, it does certainly mean that the old close personal association between practitioner and client is to some extent broken. These remarks do not imply any objection to, nor are they intended to decry, the valuable work done by the whole-time officers, but are intended to focus the attention of those interested on a fundamental change in the position of the general practitioner.

Dorset was originally a sheep and corn county but in the years that followed the first world war a very considerable acreage was sown down to grass, and so great was the attraction of the monthly milk cheque that the dairy cow quickly became predominant. However, despite the attention focussed on milk production farm stock was by no means confined to cattle, large numbers of sheep, pigs and poultry being maintained. This concentration on milk production was the cause of the arrival on the farm of many bad and indifferent animals. Some farmers bred from any cow, irrespective of breed, type, conformation or performance, frequently using a bull that should have been castrated very early in life.

As in most counties in Southern England hunting was popular and great numbers of light horses were to be found, but the second world war, with its urgent demand for intensive cultivation and extension of arable farming, has almost done away with this very pleasant and lucrative branch of veterinary surgery. Furthermore, the shortage of manpower, the necessity for speed, the inclination of youth to turn to the internal combustion engine with a corresponding scarcity of men with a liking for and ability to break young horses, has caused a great reduction in the heavy horse population in rural areas of Southern England. Nevertheless, it will be readily appreciated that the work presented is plentiful and not lacking in variety.

Country practice, in spite of its many attractions, is extremely exacting and demands of the individual considerable sacrifice. He is very largely a slave to the telephone, his hours of labour are extremely long, much of it at night. The work means much physical labour and exposure to every kind of weather, yet, for those truly fond of animals, interested in their profession and in the country, surely there can be no better job for a man, and I for one am extremely grateful for the happiness experienced as a country practitioner.

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From a South-West Country Practitioner

I ask myself, what can we do now that we could not do 25 years ago? My answer is, "very little." In medicine we have seen one bit of trial and error follow another. Originally it was "when in in doubt use pot. iod.", the idea being largely copied from the medicals. At the same time quinine went down the neck of any poor animal with a temperature . . . based largely on a misunderstanding of the reason for "fever."

What has happened since? Allowing for certain virtues of the sulphonamide group, these drugs are now being used in the same way as were pot. iod. and quinine. They have all a place but not always a high pedestal. People have at the same time become "calcium" mad, and any cow which is on the ground gets calcium.

Improvements in diagnostic methods have made poor progress. Even in connection with tuberculin testing we have no better method now than then, as far as accuracy is concerned. It has to be admitted, of course, that large-scale testing could not be carried out with a temperature-taking method. Incidentally, I am satisfied that tuberculin could be saved, and also time, if we tested—as I have for ordinary diagnostic purposes for many years—with a single injection into the lower lid, side of neck and tail. The vast majority of positives are showing themselves at one or more sites in 48 hours.

In dog practice we have witnessed the increasing use of vaccine against distemper—an advance, no doubt, but not always so wonderfully good. There are some advances in connection with diseases of poultry and sheep.

In surgery it is a little different. The use of the wire saw for embryotomy is a great step forward; improved technique in the use of local anaesthetics, especially in connection with the head region in bovines, epidural in bovines and dogs, and of general anaesthetics (for which Professor J. G. Wright deserves credit), and surgery of the external ear in dogs, are all advances.

As to veterinary surgeons themselves, there is not so much in the way of improvement. There is too much hurry to use a microscope and a hypodermic syringe before using naked eyes and ordinary common sense. There is too great a tendency to treat disease, even mastitis, without having regard to the actual cause of the trouble—stopping up holes instead of killing the rats.

We have heard, in my opinion, a lot of nonsense about drawing veterinary students from the country. Experience during the war has, I think, shown quite clearly, even in connection with land girls, that many of the best girls with cattle are the "townies," though it may well be that such town girls have, shall we say, "agricultural genes," for their ancestors.

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Private Practice in North Wales: 1844-1944

In all countries agriculture and veterinary practice are closely intertwined, and their character and development are largely dictated or determined by certain extrinsic factors which require notice. North Wales consists of moorland, mountain and hill country with corresponding valleys of varying soils and climatic conditions. Mixed farming predominates, from cottage holdings to farms of small to average acreage in hill country, the dairy farms and larger homesteads being in the valleys, whilst purely sheep stations may embrace an entire mountain. All six counties, Montgomery excepted, are bounded by the sea, consequently most practices are well inland, whilst to eastward, Welsh and English practices overlap where the borders merge. Industries are few comparatively in number or kind, coal and lead mining being probably those making chief contact with practice, the former in affording considerable colliery work, the latter as a menace to livestock in lead districts. From the long past, and it is largely true to-day, large agricultural areas and most mountain lands have belonged to an old Squirearchy, living most of the year in manor houses in the midst of their estates. By taking an active part in running their "home farms," most landlords could be regarded as farmers; careful of their estates and paying great attention to afforestation of suitable lands. The countryside owes to the example and leadership of this landed aristocracy, much both of its woodland beauty and the improved quality of its livestock. The Welsh language is a factor of varying but considerable import. In 1931, in all Wales 200,000 spoke Welsh only, another 800,000 being partly or fully bilingual, but even so a general partiality to use of the ancient speech remains.

Of the factors mentioned, several combined to create and foster in N. Wales a certain insularity unfavourable to the entry or adoption of new ideas, which for a period delayed progress. Here as elsewhere for long ages, agriculture and veterinary practice alike, had remained just traditional arts, hardly touched by any scientific concept, changing slowly but very reluctantly; an environment in which empiricism flourished widely. Looking back no farther than the 1860s, the conception of the country farmer of the ailments of his stock was too often a compound of tradition, guesswork, and stubborn ignorance. Home treatment was the rule, entirely empiric, generally worse than useless, often cruel. Housing of stock lacked the elements of hygiene, ventilation and fresh air being considered dangerous; the value of sunlight was unthought of even by the doctors, whilst dietetics were a matter of "rule of thumb." True a few graduates had settled in most counties, but they were too few and far between, and over large areas the "farriers" continued the only near available help. Fortunately, unlike the "Coleman graduates" of Youatt's scathing picture, these men were a native product, men of country breeding and instincts and familiar from

childhood with animals in every way. Although varying greatly, many were highly esteemed; some as early as 1816 had published books on animal doctoring in Welsh which were eagerly consulted. Upon the whole shrewd judges and observers, a hardy race ever in the saddle, they rendered much service in their way and time—R.I.P. They were still numerous in the 1880s, and many a young graduate venturing in, had for a time an uphill fight for acceptance. When called, it was with heartbreaking frequency a case of "too late," or the fleam and innumerable concoctions had done their fatal work. In other cases instructions were ignored or disobeyed deliberately, especially as regarded ventilation or feeding: if one was tempted to be severe, it was wiser to convince by intelligible reasons, for the delinquents were apt to be stubborn where they did not understand. Many farriers were quite expert at "calving and foaling," and their reputations rested largely upon such skill, but usually they met their "Waterloo" when an embryotomy was the only solution. Hence success here by the practitioner meant a real "hit for six," which could transfer to him at one stroke the allegiance of entire districts, and, given competence, application, and patience the adventurer usually won sooner or later. For in reality, although old, the empiric citadels were only founded on shallow sands, and, like the walls of Jericho, crumbled at the sound of the trumpets of scientific methods, and these had long been increasingly heard. For, looking back now to a period prior to the Charter which nominally converted our ancient craft into a profession, science, the greatest factor of them all, had long been painfully toiling to take a hand. The Charter of 1844 must perhaps be properly regarded as the result, and not the cause of that marriage of science to our ancient art, which was shortly to transform and vivify it. The Charter was, however, the great bond created by the then choice spirits of ordinary veterinary practice, and which forged them into a brotherhood working for an ideal, and following a vision they had seen, and kept steadily in sight despite the smoke screens of a corrupt charlatanism.

Then follows the progressive story of new knowledge of disease causation, control and prevention; fresh conceptions of the laws of health, and, contributed by many sciences from optics to biochemistry, new ways and means to implement them in daily practice, and all spurred on in timely and worthy fashion by the Royal College, and the teaching schools. Here as elsewhere, the greatest advances in scientific practice have come within living memory, and the tempo of change has ever increased, until our feet are now firmly planted on the path of preventive medicine. And so, in the short century just ended and on the sure foundations laid by those practitioner pioneers, has arisen this present heritage of ours; a fitting monument to their memory and of their labours, may we guard it as faithfully and foster its future as wisely.

On another plane, yet especial boons in N. Wales, have been the advent of the motor, greatly improved roads, and extension of the telephone to remote villages and farms—all combining to reduce delays in calls, and response to them by the practitioner. Another boon has been the placing on its doorstep of a veterinary college by the transfer to Liverpool in 1904 of New College, Edinburgh, founded there in 1873 by that great clinician and teacher, the late Principal Williams, himself a native of North Wales. The centreing in 1924 of the N. Wales branch of the Veterinary Investigation Service, at Bangor University College, has also been a progressive measure of great importance. Given wise and careful observance of the rules now governing its procedure by both officers and practitioners, and loyal co-operation between them, this service and its laboratories will assuredly become an integral partner in the scientific practice of our profession, and to the benefit of those we serve. In some ways private practice has probably changed less in recent years than in many other areas. So far mechanisation is not common; cart horses, cobs and ponies, continue to be bred and used, whilst much greater attention is being paid to pigs and sheep, so general practice lacks neither variety nor interest. In the control, prevention, and treatment of the many scourges of sheep involving serious losses of the nation's food, great advances have been made. In the remote hill stations, the Investigation Service has perhaps been of especial value by educating the shepherds and directing the means of prevention and treatment. In 1844, of the 1,000 persons in qualified practice in Great Britain, only about 16 were known to be in North and South Wales combined; by 1872 there were about 23, in 1879 reaching 35, and in 1889 the number was 67. In the years 1882 and 1914 respectively, in the six North Wales counties the figures were: Anglesea, 1—8; Carnarvon, 2—6; Denbigh, 10—21; Flint, 2—7; Merioneth, 2—6; Montgomery, 5—7, being totals of 22 for 1882 and 55 in 1914. Now in 1944 the corresponding county figures are: 6, 8, 19, 6, 5, 10, total 54, or one less than 30 years ago. In addition there are at present about 17 officers of the Ministry and the Investigation Service, with an unknown number of assistants to practitioners. Any early leeway in private practice previously noted as due to certain factors, has long ago been more than made up, and it can be said in all confidence that its standard of efficiency is worthy of that of the rest of the country, whilst there is a strong and representative Division of the N.V.M.A. which is very much alive.

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Veterinary Private Practice in South Wales

Private practices in South Wales are chiefly concerned with horses and cattle, although during recent years much greater attention is given to dogs, cats, pigs, and particularly sheep. During recent years, too, there has been a great change in the character of the work done on large animals. This change is attributable to:—

1. Different methods of farming.
2. Greater value of farm stock.
3. Introduction of Ministry schemes.
4. Extinction of the quack.

(1) Until recent years South Wales farms were almost wholly self-contained. They bred their own stock and fed them on food grown on the farm. The farmers gained their livelihood by selling their stock as store. Later the bigger farms in the valleys began to sell milk. This method of farming has increased very rapidly until by now practically all except the very inaccessible farms are producing milk with the resultant greater demand for veterinary services.

(2) Little attention was paid to the breeding of pedigree stock. This is a deplorable fact in view of the low incidence of tuberculosis in Welsh cattle. Welsh farmers have seen their mistake and great attention is now paid to encourage straight and pedigree breeds.

(3) The introduction of the Ministry's schemes, more than any other factor, has been productive of the change which has taken place in private practice in South Wales. The first scheme introduced was the T.T. milk scheme. Many more farmers would have joined this scheme if their byres conformed, or could be made to conform, to the required standard of the Ministry of Health. In spite of this there are 932 farms on the T.T. Register. The next scheme to effect this change was the Accredited Herd Scheme, and the number of farms producing Accredited milk is 1,691. Then came the Attested Herds Scheme. The farmers of South Wales took this scheme in earnest and, encouraged by the low incidence of tuberculosis in their cattle (less than 4 per cent.), they envisaged better values for their cattle and subsidies in the form of bonuses for their milk. Much credit is due to the veterinary surgeons practising in South Wales for giving the lead and guidance to the farmers. They not only increased their own turnover, but made Welsh farmers prosperous. The number on the Attested Register is 5,759. The last scheme to increase the work of practitioners is the Survey Scheme —448 have enrolled.

(4) Up to the early nineties quacks were very numerous in South Wales. Some specialised in horses ("horse doctors") and others in cattle ("cattle doctors"). Their methods were crude and cruel. Phlebotomy was their standby and cure for all ills. Their services, however, were in great demand, chiefly because veterinary surgeons were few and far between, and since the only mode of transport (the horse) was slow, the services of the qualified could only be available to those in the immediate neighbourhood of the veterinary surgeons. There are only a few quacks in South Wales now, and those left are doing but little work. The advance in veterinary science and the improved services offered by veterinary surgeons will soon cut them out altogether.

The effect of these changes is shown by the following comparison. The number of qualified practitioners in South Wales in the early nineties was round about 18, and the number now practising is from 65 to 70. There is very little work for practitioners with pigs, since pig breeding is only on a very small scale, but war-time pig clubs are now creating an appreciable amount of work for veterinary surgeons in some of the towns. All the diseases of pigs are, however, well known to them, and are treated scientifically. Sheep diseases have become far more common during recent years. Much research is still necessary, but good work is being done by practitioners and their aid is constantly sought. The assistance given to practitioners in South Wales by Veterinary Investigation Officers, particularly with sheep diseases, is much appreciated. Dogs and cats, except in the large cities, represent only a small percentage of the veterinary surgeon's work.

It is gratifying and encouraging to Welsh veterinary surgeons to see more Welsh students entering the veterinary colleges, for although there are very few monoglots in Wales, there are very many farmers who prefer Welsh-speaking veterinary surgeons. South Wales, and particularly the veterinary surgeons practising there, is greatly perturbed by the apparent determination of the Loveday Committee to ignore the claims of the principality to have one of the proposed new veterinary schools. They do not voice their claims for sentimental

reasons but they have a genuine desire to see Wales having its rightful place amongst other nations, and to give a stimulus to Welsh boys to enter the veterinary profession.

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Veterinary Practice in Scotland

One hundred years is a fine round period of time for retrospect and appraisal. It has the disadvantage, however, that it exceeds the span of a human memory. Roughly, it would extend to about two human memories. Since there are no living witnesses of the happenings of a hundred years ago, it is only from records and traditions and by the exercise of our imagination that we can get a conception, vague and sketchy, of the conditions which then existed. Certain events stand out clearly, but to most of us is denied the gift of building up in living semblance the background against which these events were enacted.

Had this been a historical survey, the writer would have found it a most fascinating one to pursue, but neither space nor the circumstances permit of that. In Scotland, as perhaps elsewhere, record and tradition alike are mainly concerned with the clinical side of veterinary activity, and some famous names emerge. With just a trace of condescension we may smile a little at some of their ideas, but can we be so sure that a hundred years hence a few of our own cherished opinions may not evoke a shade of tolerant amusement? Judged by any standard the achievement of many of our predecessors was great in breaking a track through the dense forest of ignorance. "There were giants in the earth in those days." But the writer is not one to exalt the past in disparagement of the present. Perhaps there are giants among us even now, could we see them in true perspective, if their stature were not occulted by the nearness of ordinary men.

Although in these days the economic predominance of the bovine is established, that is a comparatively recent phenomenon in veterinary affairs. For the greater part of our history the horse was by far the most important animal. Diagnosis and treatment of cattle diseases, however, was by no means negligible in amount, even in towns and cities, where large herds of dairy cows used to be kept. Apart from the general round of practice there were the great epizootics of cattle, in coping with which veterinarians must often have been busily engaged—the more frequently, no doubt, since it was at one time the custom, when pleuro-pneumonia or rinderpest invaded a herd, to "sell off" the cattle not yet affected. Losses must have been terrific. One reads of a dairy where "very many cows were lost"; of another, "150 cows died"; of a third, "174 cows died." (The owner of this last herd "gave up his dairy—not, however, from fear of the disease"!)

It is not likely that horse practice in Scotland has differed greatly from that in England during the past hundred years. There will have been the same colics and pneumonias (now happily rare), colds and assorted lamenesses confronting the clinician. From conversation with colleagues in the south the writer has often gained the impression that poll-evil and fistulous withers were of more common occurrence there than in Scotland. Would it be just Scottish prejudice that underlies the feeling that grease also will be more prevalent in England? Perhaps. On the other hand, the Clydesdale horse is sometimes charged with being specially susceptible to stringhalt and shivering. Is quittor less common than it used to be? A purely personal impression that it is, received firm support recently from a Scottish practitioner of wide experience.

There was a time not so long ago when Scotland held an unenvied monopoly of grass sickness: a dreary distinction indeed, but alas! no longer a monopoly.

Seven counties in the highlands of Scotland are known as the crofting counties, and these have always presented a difficult veterinary problem. Each crofter may have only one or two animals, and attending veterinary surgeons have great distances to travel, often 50 miles or more to a single case, a circumstance clearly unprofitable alike to the owner and the veterinary surgeon. To ensure adequate veterinary attendance in these areas the Department of Agriculture for Scotland have a scheme whereby the veterinary surgeons receive a subsidy, in return for which they give their services to the crofters at a reduced scale of fees, the scale being based on the crofters' rentals. Free laboratory services are provided, and sulphanilamide when required is supplied at a reduced rate. Since its institution the scheme has been extended to include preventive medicine.

What might be called the luxury branches probably form a smaller part of practice in Scotland than in England. There has always been less racing and hunting, and there are far fewer of those large residential towns which before the war gave scope and remuneration, both on an ample scale, to the canine and feline practitioner. Still, even in Scotland in war-time, the city practitioner who used to be busy with horses is now increasingly busy with dogs. Then there are the greyhounds. The popularity of greyhound racing is astonishing, particularly in the industrial parts. Where in England the miner may keep a pig at the back of his cottage, in Scotland he keeps a greyhound. All the larger tracks employ veterinary surgeons regularly, and knowledge and technique have both been advanced by experience of the maladies peculiar to racing greyhounds.

The story is not nearly told, but, conscious of the inexorable eye of the editor and his poised blue pencil, the writer must now stop.

[Addendum: The writer of the above note on Veterinary Practice was a colleague very long held in the esteem and affections of the "National." As he is since dead, and his considered opinion which was so highly prized in his lifetime is no longer to be obtained, we have thought it would interest our readers to read the replies received from him on two important topics arising out of his contribution. These deal, first, with the problem of unqualified practice, the query having been addressed to him to seek corroboration of the view of the historian that the relative absence of unqualified practice in Scotland is to be assigned in the main to the attitude taken by Professor Dick at the outset in his methods of recruiting men for training into the profession, selecting them, as he did, for their special aptitude to discharge the tasks ordinarily demanded of them on return to their own native localities. This was, as is well known, in marked contrast to that long followed by Coleman in England, who flooded the profession in England with a large number of men who were often quite unable to hold their own against those who did not possess his Diploma, but were already established in their districts. Secondly, in view of the greater importance now paid to agricultural practice, it seemed fitting to enquire to what extent there has been a real readjustment in Scotland of the profession to meet the special needs of that form of practice, especially cattle practice, the large town practices having largely vanished which were so lucrative by comparison until shortly after the close of the last century and which were built up around the high economic value of the horse.

Our esteemed contributor's replies (May 22nd, 1944) were:—

"As to the points which you raise at present.

"1. Definitely, unqualified practice is not a menace in Scotland, as it is in England. I think it would be no exaggeration to say it hardly exists. To some degree it did prevail after Dick's time (I have heard old farmers speak of the 'farriers' of their youth), but I think, as you suggest, that as many of Dick's earlier students were young farriers ('practical men' as he called them) who returned to their districts after attending his lectures and demonstrations, the advantages of veterinary training would be evident. The interest which the Highland Society took in Dick's activities, too, would undoubtedly bring it home to many farmers that a new profession was in gestation. Quite an important influence would be the traditional Scottish respect for learning—dying out now, I fear. I have a feeling, also, that the average Scottish farmer is rather more enlightened than his brother in England.

"On the *per contra* side, the P.D.S.A. has now come to Scotland. It is too soon yet to say how they will fare, but as soon as the war is over they may indulge in a big campaign.

"2. Oh, yes, I am sure there has been a real advance in bovine clinical treatment, not, of course, confined to Scotland, and not in manipulative skill, but just the result of advancing knowledge. The drastic purgings and bleedings are a thing of the past; we do not yet understand ruminant digestion, but as a clinical entity impaction of the omasum has been discarded; recognition of traumatic reticulitis is often early enough to enable something to be done about it; those inventions of the devil, the oesophageal probang and the milking needle, are now, in the main, curious relics; epidural anaesthesia is a godsend in bovine obstetrics; something is known about deficiency diseases, and acted upon (but we are just on the fringe of that); diagnosis of ketosis is fairly accurate and the treatment successful; parasitic conditions such as "hoose" are increasingly dealt with by removing animals from the sources of infestation. Oh, I could go on. But for your assurance I won't!"

The historian's view regarding the causes of the relative absence of unqualified practice in Scotland would therefore appear to receive ample corroboration from one who had long and intimate experience of actual practice in Scotland. Consequently, we may well deal with that view. Reflecting at the very close of his life upon the causes which led to the failure of the highly polished veterinary scholar and outstanding genius, John Gamgee (1831-1894) to continue for longer than eight years the veterinary college opened by him in 1857 in opposition to that founded in 1823 by William Dick (1793-1866), the late Sir Frederick Smith (1857-1929) wrote:—

> "The twelve months that Gamgee worked with Dick [before he opened the rival college] gave him a valuable insight into the defects of the Clyde Street (Dick's) education, yet it was

those very defects which made the school. Dick did not trouble his head about modern pathology, nor even exactitude in anatomy. All he thought of was the production of a race of practitioners whose knowledge was superior to that of the agriculturist and who would have no difficulty in holding their own against the formidable rivalry of quackery. These men Dick could produce, because no matter how wanting he may have been in the science of medicine, his practice was deeply rooted in experience, and this he could impart.

"Gamgee was no source of strength outside the lecture theatre . . ."

"Created by the industry and indomitable perseverance of a man who understood his work and was in possession of a large private practice, the school (Dick's) was able to do for its students what the London School could not, and they went out into the world a credit to their training" (*Hist. Vet. Lit.*, **4**, v. 156).

What had happened meanwhile at the London Veterinary College since the death of the first head, Sainbel (1750-1793), within two years of the opening of the College was that a young surgeon, Edward Coleman (1765-1839), with no previous experience of veterinary practice, was appointed to be its head and, for the reasons we have dealt with earlier in this special number, brushed aside the remarkably wise programme of education and research laid down by John Hunter (1728-1793), shortening the course to as little as three to five months and admitting for training a "rabble" which was neither intellectually well endowed, as were some of the students enrolled before his advent, nor had the natural aptitude and sound vocational sense which William Dick in Scotland came to demand from, and foster in the minds of, his students. Furthermore, in the succession of appointments to the headship of the London College since Coleman's day none of those who came to be appointed seems to have been endowed with Dick's combination of vocational percipience, didactic gifts and capacity for exercising a proper discrimination in the choice of human material, and some who were remarkably well gifted with, at least some of these qualities, such as William Youatt (1776-1846) and William Percivall (1793-1854) were, as is now well testified, excluded from opportunity to bequeath to their posterity the full benefits to be accrued from their possession of those gifts. Dick, moreover, seems to have been conspicuously endowed with the capacity to inspire in his pupils a pioneering spirit, as is witnessed by the achievements of Andrew Smith and Duncan McEachran in America, Hallen in India and Hutcheon in South Africa, or of James McCall and William Williams as heads of veterinary colleges also in Scotland. In Dick, Williams and McCall, Scotland would therefore seem to have been favoured as meanwhile England hardly was in the matter of competent teachers for the training of practitioners, forasmuch as these men were themselves, in their day, great practitioners gifted exceedingly with the power to impart their knowledge and experience to a rising generation with the proper aptitude. The unfortunate death at an early age of John Barlow (1815-1856), Dick's brilliant disciple and an inspired teacher, it has been said again by the historian, probably robbed Scotland of what was critically needed during that period of the evolution of its veterinary affairs, namely, someone endowed with the capacity of grafting what was to be selected with most profit from the prolific growths of new knowledge, then beginning to abound, on to the well-rooted stock of sound experience firmly planted by those great practitioners of an earlier school.]

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Veterinary Practice in Ireland

The practice of veterinary surgery and medicine as a profession in Ireland dates from the same epoch as in Great Britain, Irishmen receiving their training and qualification there until the Veterinary College of Ireland was established in 1900 and affiliated to the Royal College of Veterinary Surgeons in the same way as the British colleges. In the early days of the profession in Ireland practice was almost confined to horses, the veterinary surgeon being seldom consulted about other animals. He had, moreover, no desire to attend cattle, pigs or dogs, being sufficiently occupied with horse practice to make a lucrative income. At that time the horse trade in Ireland was a flourishing industry and this seems to have overshadowed the importance of the other animals from the veterinary practitioners' point of view. This is in marked contrast to present-day conditions when the veterinary practitioners, especially in the country districts, are chiefly engaged in cattle practice. Furthermore, in the early days veterinary surgeons were located only in the cities and large towns and, having little or no opposition, they could pick and choose their clients. They were prosperous and held a social position on a par with that of members of other learned professions. In the south of Ireland they were, and still are, addressed as "doctor" on the same footing as members of the medical profession. Later, as more men entered the profession and started practice in metropolitan suburbs and in small towns, the clientele became further divided up, thus diminishing the incomes of the older established men.

In Southern Ireland (26-county portion) the numbers of veterinary surgeons total about 380. Of these about two-thirds are in general practice and the remainder hold whole-time appointments. At present one-half of these practitioners hold part-time appointments under the different local authorities and the Department of Agriculture, and it may be observed that if such part-time employment did not exist many country districts in the south and west of Ireland would be without the services of veterinary surgeons, owing to a dearth of arable land in these areas and to the population being consequently too scattered to support veterinary practitioners without the aid of a subsidy in the nature of part-time appointments. In some cases, however, the remuneration for these appointments is not adequate to enable the practitioner to carry out his official duties efficiently. Despite these appointments, however, there are still large areas, especially in the west, which are unable to maintain the services of veterinary surgeons. To remedy this state of affairs the Department of Agriculture in 1912 instituted veterinary dispensaries in these localities whereby veterinary practitioners were granted moderate salaries for giving attention to the animals on small holdings at nominal fees. This system, however, did not prove attractive to members of the profession and most of the dispensaries ceased to function after a number of years.

In Northern Ireland (six-county portion) the number of veterinary surgeons totals about 170. Of these, over 60 are in general practice and over 100 occupy whole-time appointments under the Ministry of Agriculture. Up to 1937 many of the Northern practitioners held part-time appointments, as is the case in Southern Ireland, but in that year these part-time duties, together with many of the part-time practitioners, were taken over by the Central Authority as part of a whole-time scheme, so that part-time appointments for practitioners then ceased. However, despite this change in organisation the Northern Counties are still fairly well served by general practitioners, since this portion of Ireland, in contrast to parts of the south and west, consists mainly of arable land, with a consequent comparatively dense population, where tillage is widely practised and where practitioners can command fairly lucrative incomes without the aid of part-time appointments.

The scale of fees charged by practitioners in Ireland differs generally from that in Great Britain, being higher in Ireland where the fee in most cases is sufficient to cover the cost of medicine supplied, while in Great Britain fees and medicine are usually put down as separate items, the fee being accordingly smaller. It would appear, therefore, that veterinary practice in Ireland has less of the commercial aspect than elsewhere, the sale of drugs not being exploited as a source of income in lieu of a substantial professional fee.

Veterinary practices in Ireland are comparatively small so that very few practitioners adopt the partnership system or employ whole-time assistants.

Recommendations for an improved veterinary service in Eire have recently been forwarded to the Eire Government by the Veterinary Medical Association of Ireland, whereby the veterinary practitioners would be incorporated as a part of a general veterinary service, thus ensuring that all parts of the country would have a veterinary surgeon within reach, so that his advice would be available in an advisory capacity for the maintenance of animals in health as well as for treating them for disease.

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(c) Some Special Aspects of Veterinary Practice

(i) Horse Practice

The 100 years covering the Royal Charter has seen great changes in veterinary practice as it relates to the horse. These, however, have been on lines somewhat different from developments affecting other domestic animals. The century opens with every member of the College a horseman, and probably a horse owner, his main occupation primarily the horse, and he, an expert in the arts of firing and blistering.

A hundred years later we find a minority of veterinarians exclusively engaged in equine practice, and firing and blistering the accomplishment of a limited few.

This change has been due partly to the substitution of mechanical for horse traction, but equally so to the enhanced importance of animals of meat- and milk-value, and the rising reputation of British farm stock.

The century has seen the rise and decline of numerous large commercial undertakings, employing horses in great numbers. This has led to the whole-time employment of a veterinary surgeon in charge of these horses. A splendid field for specialisation in equine practice has thus been provided, and it is pleasing to note that not only have such men been entrusted with the care of the horse as a casualty, but in many cases they have become also the friend and adviser of the firm in the matter of new purchases, and the whole problem of feed and keep.

In the field of surgery, probably the most significant single advance has been the introduction and employment of anaesthetics, a development, however, not peculiar to equine practice. This fact enables major operations to be carried out in a manner never previously possible, with a consequent all-round improvement in technique, and results. Nevertheless, equine surgery to-day still remains for the most part antiseptic rather than aseptic, and in this respect, advancements have not been as notable as in the human and canine fields. The operation for roaring provides an example of a new technique which has been practised on an extensive scale.

In the vast field of lameness, few notable developments can be recorded, notwithstanding the extraordinary amount of attention the subject has received. In this field, the introduction of radiography has not given that assistance which had been anticipated, and which has been such a notable feature of small-animal work.

In regard to medicine, the tendency has been towards a reduction and limitation in the use of drugs and nostrums, rather than more extended use. During the 100 years that have passed, the value of certain medicaments has been enhanced, and it has seen the introduction of certain new preparations of outstanding merit. Nevertheless, employment of good nursing, fresh air and hygiene has progressed in greater proportion to the use of drugs. It is worth recording that the method of administration of medicine has undergone marked changes during the century, notably the employment of the stomach tube, and of hypodermic medication.

The treatment of colic and other digestive troubles has perhaps received greater attention than any other branch of medicine, but, here again, the outlook over the century is a story of improved dietetics and applied physiology, rather than a triumph in therapeutics.

When we turn to the field of contagious diseases, we touch on what is probably the most notable success that the century can show. The profession has no doubt been fortunate in that, on numerous occasions during the period under review, it has seen horses brought together in vast numbers, particularly under the necessity of war.

The condition essential to the thorough study of disease dissemination and control has thus been provided and the record is gratifying in the extreme. Mange, glanders, epizootic lymphangitis and dourine, are but a few of the diseases in which elimination and control in many parts of the Empire has been effected. The results provide a sure indication alike of the field or work awaiting attention among other domestic animals, and the reward to be secured.

It is necessary to make mention of the dominant part played by the profession in the improvement effected in horse-shoeing and the care of the foot. The century opens in a maze of ignorance, mutilation and abuse, and closes with rational methods in general application n the hands of trained and educated farriers. This great and welcome change is for the most part directly due to the study and teaching of the veterinary profession.

Finally, one must not leave the horse without referring to the improvement shown in the matter of housing, feeding, clothing and appointments. In many cases these have attained a luxury and extravagance not even enjoyed by the attendant groom. Indeed, so universal has the outlook become in regard to the minimum essentials necessary in the care of the horse, that to-day, even the poorest establishment will show some attempt at proper stable fittings, reasonable clothing, and well-fitting harness. This is in marked contrast to conditions generally prevailing among other classes of stock, although recent years have shown marked advances in the care and housing of cattle, pigs and dogs. It is a fact that even to-day no such thing as clothing for a sick cow exists, and the most insanitary conditions are normally considered good enough for the household pig. Man's affection for the horse, the horse's economic value, and the part played by him as a feature of sport and pleasure can only in part explain this discrepancy. For this enlightened outlook in regard to the horse, the veterinary profession may justly claim a large share, and will no doubt play a leading part in ensuring that similar minimum standards of comfort become the lot of less favoured animals.

During these 100 years, membership of the College has come to be acknowledged the only qualification generally acceptable by the public in regard to services calling for certification. This applies particularly to examinations for physical condition, for insurance, for breeding, for export, and even for height measurement.

The high standard of such work and the indisputable weight such certificates carry among the public at large reflects the creditable manner in which this special class of work has been carried out by members of the College over the 100 years and the special qualification for such work their training confers.

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(ii) Cattle Practice

During the past ten years, more attention has been paid to cattle diseases, their etiology and treatment, than ever before. The cow, once the perquisite of the country practitioner, has emerged from her isolation and now engages the interest and attention of every type of veterinarian. This is due partly to the fact that many capable and enthusiastic practitioners, who were inclined to look askance upon cattle practice, have been compelled, owing to the shortage of horses, to change their attitude. It is equally certain, moreover, that many of the recent additions to our knowledge of cattle physiology and pathology have originated from another source. A far greater proportion of the younger generation of graduates than hitherto have turned their attention from the earliest days of their training to unravelling the conditions and diseases which beset dairy cattle, the etiology of which has been obscure until the present time. They have supplemented the clinical experience of their predecessors by the application of up-to-date laboratory technique and the exercise of physiological and bio-chemical knowledge not possessed by the older practitioners. The result is that we now have within our possession a greater understanding than ever before of the nature of many cattle diseases and we have, at our command, methods of treatment entirely novel. It does not follow that these new treatments are invariably successful, nor that they do not sometimes give rise to disappointment, but they are nevertheless steps in the right direction which may, in time, lead to some measure of success.

Attention has been focussed in this direction of late years, owing to the greatly increased importance of milk and meat production within this country. The productivity of the modern dairy cow has been stepped-up by selective breeding, in some cases to the point of abuse, with the result that the need for a greater knowledge of her physiology and bio-chemistry now occupies the time and energies of a growing field of workers.

Disease prevention, applied to the herd rather than to its individual members, is now regarded both by the farmer and by his veterinary adviser as a sound economic proposition. It must not be concluded however that the veterinary treatment of sick individual animals has lessened in importance ; the farmer and more particularly the smallholder still judges the ability of the practitioner by the success he achieves in saving the life of the milk producer and the combined efforts of the many hundreds of veterinary surgeons, who are engaged throughout the country in restoring sick animals to health, and production, must exercise a remarkable influence upon the milk yield of the country as a whole. Knowledge within this sphere is growing daily ; treatments are improving, even if the rate of progress be slow and gradual, but when we consider in how few years these results have been achieved, we can look forward to the future with a degree of optimism. But it is essential that we make haste slowly and do not proclaim our results too loudly lest we discredit our few successes by drawing the attention of our clients to our many failures. The willing co-operation of the farmer is a *sine qua non* of all successful treatment.

Infertility in cattle has increased a great deal of late years, partly as a result of commercial management of herds and partly owing to the fact that cows have been bred to produce a volume of milk in excess of their physiological capacity. War-time diets have failed to supply all their needs and the war-time requirements of the nation have increased the demands made upon them. At one time it was considered that the introduction of the dual-purpose animal would counteract the wastage from disease and infertility, but, in actual practice, it has been found that the production of milk comes first and that the animal with beef characteristics is unfitted to carry the burden of continuous heavy lactations. The result, too often, is a dried-off, emaciated cow which it is not economical to feed for the butcher. In south and south-west England the commercial herd gives place to the pedigree herd and the regard for the individual animal is greater than in the Midlands where the tendency is to market everything which is either unsound or fails to show a profit and to replace it by another animal which, it is hoped, will show immediate returns. This practice encourages the dissemination of disease whilst isolation of new purchases is seldom observed. Moreover, the tendency in the Midlands is to milk cows during their first three lactations only, whilst in the south and south-west a cow is not considered in her prime until she has borne her sixth calf.

From the veterinary standpoint these local customs determine the type of practice. Among the older cows of the butter-producing

breeds such as the Guernseys and Jerseys, so popular in the south-west, one deals largely with diseases arising from mineral deficiency such as milk fever, magnesium tetany and with those associated with ketosis. All of these are far less prevalent in the commercial herds of the Midlands, comprising younger animals and more moderate producers. In the southern areas, veterinary practice in country districts is far more interesting as it constantly provides the practitioner with fresh problems and the work, if more arduous, is a greater test of skill and experience.

Mastitis, abortion and infertility still remain the bugbears of country practice. Johne's disease appears to be lessening in incidence, for no obvious reason. Infertility is being studied very carefully by numerous workers but, in a large proportion of cases, accuracy of diagnosis is still beyond our knowledge. Treatment tends to remain somewhat empirical and a slavery on the part of the general practitioner to an unvaried routine and technique, unproductive of successful results, may eventually lead to a discrediting of all treatments by hitherto disappointed clients. The treatment of infertility is still in the experimental stage and a vast amount of good work is being performed by practitioners and research workers which should shortly bear good results. Mastitis assumes many forms, of which only a few are as yet benefited by treatment. Sulphanilamide, successful in suitable cases, has not the wide application which was at first hoped for. Chemotherapy, however, makes rapid strides and the day may not be far distant when the chemist will exert as great an influence on the treatment of disease as has the bacteriologist in the past.

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(iii) Mixed Horse and Cattle Practice

The granting of the Charter in 1844 has had a profound influence on the evolution of horse and cattle practice. Before that period quackery abounded and the treatment of animals was chiefly in the hands of charlatans and ignorant, uneducated persons whose ideas of treatment had been handed down from the dark ages.

At first the course of study was very short, but as knowledge of hygiene, physiology and anatomy increased and more books were written so the period was extended, until at the present time five or six years is not sufficient to enable the student to become familiar with the knowledge available.

Human medicine and surgery advanced along similar lines and often intermingled. The veterinary profession owes much to its sister profession—more especially did it do so in its early days—also to some stalwarts of our profession, good clinicians such as Youatt and Gamgee, whose early books showed keen observations and deductions on diseases whose cause was then often obscure. These men had a love of their profession and raised its status by their example and knowledge, so that soon a number of men of standing were established in the country in private practice and in the Army.

The horse was the chief means of transport, so equine practice was paramount. When a horse was purchased the veterinary surgeon was called in to examine it for soundness, and when it was found that the judgment and honesty of such a man could be relied upon he earned the respect of everyone until at the present day the term "to vet." has become part of the English language, meaning a thorough and honest opinion by an expert.

The discoveries of Pasteur, Koch, M'Fadyean and others introduced a new era, the causes of diseases being investigated and brought to light. Many diseases which had been devastating the country were stamped out or brought under control and the veterinarian now carried a hypodermic syringe and a variety of vaccines and sera as part of his equipment.

The clinician now began to take second place to the bacteriologist, and although funds were lamentably short, great strides were made until at the present day a number of research institutes have been established and some funds are being provided from outside sources for the continuance of this great work. It can be claimed for the veterinary profession that the advances made are almost entirely due to its own unaided efforts.

The State and agriculture in particular are beginning to realise that money devoted to research into animal diseases is paying a handsome dividend.

The horse having been superseded by the motor, except for some farm horses and others used for sport and pleasure, the cow has become of more importance. This has been brought about by a number of factors :—

(1) The realisation that milk is a perfect food, especially for the young.

(2) The efforts that have been made by the veterinary and medical professions to obtain a cleaner and purer milk supply.

(3) The encouragement given by the Ministry of Agriculture by granting increased remuneration for better milk.

(4) The researches by the National Institute of Research in Dairying and other bodies into the causes of milk souring and methods of preventing it, so enabling milk to be produced in large quantities and transported long distances.

(5) The researches into cattle diseases, especially those affecting the udder and milk, carried out by veterinarians.

(6) Last, but not least, the efforts of the producer to clean up his herds, and to improve his cowsheds and his dairy hygiene.

The percentage intake of milk in the British Isles per head of the population is much lower than that in many other countries but this is rapidly being increased.

The value of dairy stock is much enhanced so that it is an economic proposition for the veterinarian to be called in to treat them. Prevention of disease is now being stressed and with bigger herds this is very necessary, many diseases such as contagious abortion, tuberculosis, mastitis and Johne's disease being capable of prevention or of control. Not only have cattle diseases been studied but, concurrently, those of sheep, pigs and poultry, and if sufficient funds are available the cause, treatment and prevention of many diseases still obscure will become apparent.

The changes thus brought about are altering the whole vista of veterinary practice : from being chiefly a horse expert the veterinarian is now called upon more and more to deal with the other domesticated animals. So with the decline of the horse new paths are being opened up and new responsibilities are being undertaken by our profession which one can only hope will be all to the benefit of agriculture and the nation.

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(iv) Sheep Practice

If the Royal Charter of Incorporation of 1844 was primarily intended to regulate and improve equine practice, it none the less spelt the eventual emancipation of the more lowly farm animals from centuries of ignorance and neglect. The Charter specifically related to horses, cattle, sheep, dogs and other domesticated animals, but in the golden age of the horse, with veterinary surgeons never too plentiful and with other and more pressing duties, many years were to pass before sheep husbandry definitely became focussed within the veterinary field. But the structure was well and truly built a hundred years ago in the Charter, and to-day in its centenary year, the profession is deeply conscious of its responsibilities and is actively engaged in the conservation of health and alleviation of suffering in all species of domestic animals.

Glancing over the past hundred years the observer may be pardoned a justifiable surprise to find that, despite many indications such as the periodic ravages of sheep pox, sheep scab and liver rot, no one seems to have considered it worthwhile to institute organised veterinary help for the flockmaster. The mortality from sheep diseases has probably always been high. Farmers expected losses and when, in the event, they were not disappointed, they accepted them with a resignation which effectively barred the door to the possibility of counter measures. Indeed, it needed the tight squeeze of submarine warfare to urge statesmen to a different point of view, and hurried but rather futile efforts were made to reduce the mortality in sheep from all causes. At this date it is superfluous to endeavour to apportion blame for this long neglect, but perhaps it may be said that in the materialistic 19th century neither agriculture nor the veterinary profession were quite ready for such innovations. Further, few people in authority realised the full extent of the annual wastage from diseases and under-productiveness in sheep.

Although sheep practice entered but little into the everyday work of the veterinary surgeon 100 years ago, the study of this animal made a strong appeal to certain individual members. Youatt published an informative book on sheep in 1837, and he had the distinction of being the first man to demonstrate the structural differences between wool and hair. This was an important discovery, and the way in which it was made known to a small number of intimates in the author's parlour in London forms an interesting vignette of one of our most distinguished members. Later, Thomas's notable biological researches in unravelling the complicated life cycle of *Fasciola* attracted much attention to sheep, and although facilities for applied research hardly existed, Spooner and also Williams endeavoured to keep this interest alive by their publications. But it was the work of Pasteur and his veterinary colleagues which provided the greatest impetus to a scientific approach to disease problems in sheep. Pasteur's immunisation experiments against anthrax at Pouilly-le-fort in 1881 remain a classical example of the controlled experimental technique and here sheep were the test animals. It

was also the beginning of a new era in veterinary science. Under the influence of Pasteur's teaching the bacteriological method was widely applied to the study of sheep ailments, and in a short time valuable control measures were available against a number of diseases, such as tetanus, malignant oedema, blackquarter and bradsot. Great as was the interest aroused by this new weapon against epizootic disease, Britain lagged behind in supplying needful facilities and thus delayed the time when we were to know " the remedies proper to be applied." Meanwhile, a number of non-veterinary people made excursions into the realm of animal disease research, with, it may be added, none too happy results from the sheep's point of view. The history of the investigations into braxy and louping-ill in sheep provide ample illustration of this, and served in the long run to convince informed opinion that a new viewpoint was needed. The search for veterinary knowledge is elusive. Money alone cannot command success. But the surest way to deserve it is to train and equip veterinary personnel, so that they may study their own problems. Fortunately, the lessons of 1914–18 were not entirely forgotten afterwards, and steps were taken to remedy a great defect.

The last 20 years have been very fruitful in sheep practice. A number of important diseases which for generations have caused serious and annual loss yielded to the veterinary investigator and are now universally regarded as preventable. The list includes braxy, lamb dysentery, louping-ill, sheep scab, pulpy kidney, swayback, liver rot and parasitic disease. Thus, the veterinary surgeon in 1944 possesses expert knowledge which is of great value in sheep husbandry, and is continually in greater demand, because he who can spare life deserves well of mankind. Surely this, in no small measure, fulfils our forefathers' vision, who in the Charter of 100 years ago defined its object as power to disperse enlightened practitioners of liberal education over the Kingdom.

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(v) Pig Practice

Since 1844 great progress has been made in swine husbandry and in the treatment of diseases. The golden era of pig practice has not yet arrived, but is undoubtedly on the way. The granting of the Charter to the Royal College with its right to control the education of the veterinary student, gave birth to an idea, that of a veterinary *profession*. No longer was animal disease the concern of farriers, horse doctors or cow doctors, each specialising in his own narrow groove. The " veterinary surgeon " had come to stay, and before him stretched the whole field of zoology excluding only the genus " homo."

Pigs have been under man's care for centuries, yet have still to attain the comparatively respectable status of the horse, ox and dog. The pig's reputation as a scavenger and its association with poverty overshadowed for a time its possibilities as a producer of tasty bacon and succulent hams. It is thus no wonder that the ailments of the porcine species were little known. When the economic value of the pig was realised, there followed a period of large-scale pig rearing leading to a decline in the number of " cottager's pigs," and a concentration of the swine population on farms specialising in the rearing and fattening for the pork and bacon markets. This process of what may be termed " de-urbanisation " of the pig was unwittingly aided by public health legislation dealing with the distance at which such animals might be kept from human habitations in urban areas.

As the demand for pig products increased in the expanding industrial areas, still more pigs were crowded into premises already at saturation point. In addition, the rationing of pig food to produce the maximum amount of flesh with the minimum of cost, involving restriction of exercise, no access to green pastures, and early weaning, all helped to produce a crop of diseases previously unknown to veterinary science. The services of the veterinary surgeon were required for advice in dealing with whole herds, as well as for the treatment of the individual animal. The rise in the economics of the pig industry made it possible for the veterinary scientist to explore this hitherto almost unknown field. A closer contact was established between the pig owners and the veterinary profession. The way towards this goal had already been paved by those veterinary surgeons who handled pig diseases scheduled under the Diseases of Animals Acts. Diseases were reported to the Ministry of Agriculture which were " not swine fever." As these reports grew, so the attention of research workers became focussed upon them. First came the bacteriologist and later the nutrition expert, whilst the practitioner continued his patient recording of facts as he saw them. Soon his vocabulary was increased by such terms as necrotic enteritis, swine paratyphoid, swine influenza, anaemia in piglets, scour, mineral deficiency and avitaminosis.

Following the outbreak of the second world war in 1939 there came a drastic cutting down of the pig population largely owing to lack of shipping space for the importation of certain pig foods. The result was an increase in the elbow room per pig and a return to a more natural method of rearing and feeding. Early weaning and early maturity went by the board, whilst the patient work of the pioneers, practitioners and research workers, in dealing with pig diseases, began to bear fruit. New sera and vaccines, vitamins, new drugs, and new methods of treatment all made it possible for the veterinary surgeon to render useful service to the pig industry. There are now few practitioners who do not regard the treatment of pig diseases as a normal part of the routine of veterinary practice.

According to the Report on the Pork and Bacon Trades published by H.M. Stationery Office in 1928, the selling value of the factory output of home-produced hams in Great Britain was over £2,000,000, and that of bacon was over £8,000,000, to say nothing of the various by-products. During this war interest in the pig has spread to the town dweller by means of pig clubs. Many people have thus learnt to appreciate the " home-cured " article in preference to the imported, and veterinary surgeons in town practices are called upon to diagnose and treat pig diseases within their urban boundaries once more. The immediate post-war task of feeding Europe and re-populating with farm animals must lead to greater activity in the pig industry, and to a still closer contact between the profession and the pig owner. Already many men with rather hazy ideas as to the connotation of the term " veterinary surgeon," have been brought into close contact with us through the medium of their respective pig clubs, and have learnt as others have done before them, that the modern member of the Royal College of Veterinary Surgeons has the versatile knowledge necessary to help in checking the ravages of disease in pigs as well as in other animals. If a retrospect of swine practice teaches anything, it is the value of 1844 and all that has happened since then.

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QUESTIONNAIRE ON PIGS

Q. 1.—How does the veterinary profession in Great Britain compare with the profession in other countries (*e.g.*, Scandinavian and Danish) in regard to the attention which it devotes to the pig rearing industry ?

This answer will be based on pre-war knowledge. Briefly our foreign colleagues were in a more favourable position to deal with pig diseases than we were.

(*a*) In Denmark, which is a good example, the pig industry was highly organised on a co-operative basis. Profits from the bacon sold found their way back to the pockets of the primary producer. Special farms existed for studying pig rearing. Boars of special type and quality were kept on testing farms. The Government veterinary service was available to the pig producer.

(*b*) In Britain, at the same time, the pig industry was at the mercy of low-priced foreign imports, and large-scale bacon producers, who virtually controlled the market. Veterinary surgeons' fees were often beyond the means of the small pig breeder. Only those men in a large way of business could afford to call in veterinary assistance. The rest just " slaughtered off to save the bacon."

Here there was no co-operation in the industry, nor any Government veterinary service available free of cost, except when scheduled diseases were found.

A few years prior to 1939, the British industry saw itself organised into Pigs' Marketing Board and Bacon Board. Prices were regulated, and a start was made to standardise British bacon. Litter recording and testing was carried out. Research was instituted into various aspects of pig breeding, and marketing, as well as diseases. There was talk of setting up litter-testing stations, and improving or even licensing boars. The war brought much of this to an end. Pig production was cut down to about a half. Many men went out of the business altogether. Later pig clubs came into the picture, and there was some improvement in the position, as prices were fixed and remunerative.

Thus it is not surprising that the British veterinary profession rather tended to neglect pig diseases in pre-war years. There were few large-scale producers who bothered to use the services of the veterinary profession, so that what knowledge we had of pig diseases tended to rest on the information imparted by the very few veterinary surgeons who had been fortunate enough to obtain some experience in that line.

Q. 2.—What is the pig population, and how is it distributed ?

Writing from memory, your contributor believes the pig population of Great Britain in pre-war years was round about 3 million; it is now reduced to about half that number.

The estimated approximate distribution in pre-war years was about 75 per cent. on farms, 20 per cent. special large-scale producers, and 5 per cent. cottagers. Since the war a change, somewhat as follows, is estimated: farmers 50 per cent., large-scale producers 15 per cent., the rest made up of private owners or " cottagers " and pig clubs, 35 per cent.

Q. 3.—To what features should the profession pay special attention ?

To the general question that insufficient attention is paid to pig diseases. Causes are already hinted at in answer to Q. 1.

Diagnosis is commonly very sketchy, and often lamentably lacking in plain common sense. There appears to be little knowledge of " deficiency conditions."

Few experienced " country practitioners " seem able to do themselves justice in this field; indeed, " dog practice " men more readily adapt themselves to dealing with pig diseases, than do the " horse practice " veterinary surgeons. Students leaving college, and the younger graduates are generally better, and more ready to learn. On the other hand, advisory officers do very good work with pigs.

There are still not enough research stations dealing with pig diseases. The Animal Health Divisional staffs should be able to assist practitioners where second advice is needed in dealing with obscure disease outbreaks in pig herds. Divisional laboratories should exist in each county, so that practitioners can send material and obtain advice.

Much could be done by improving the pathological knowledge of the veterinary recruit to the Animal Health Division of the Ministry of Agriculture. It is not enough to put a man through a written test on pathology after a year's service. Central abattoirs now exist throughout the country, and if, in addition to a month on field work, a month at the Weybridge Laboratory, a recruit was sent for a month (or even a week) to do practical meat inspection at an abattoir, he would thereby improve his pathological knowledge. This should prove invaluable in his future *post-mortem* work. At your contributor's establishment are slaughtered all the food

animals in addition to pigs, and the few students who have spent a week there have all testified to the value of handling actual diseased organs, daily. The writer feels sure the Ministry could come to the necessary arrangement with the abattoir authorities in various centres, to allow their young veterinary surgeons to do practical meat inspection for a short time. Such training would have to be at abattoirs where the chief inspector is a veterinary surgeon. Such a small addition to training would lead to a better knowledge of animal pathology and anatomy.

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(vi) Canine Practice

(*a*) From the Standpoint of a Senior Male Practitioner

With an experience of over 30 years, spent almost entirely in town practice, it is possible to review in retrospect the many changes which have occurred—not only in the nature of practice itself, but also in the type of graduate, and in the mentality of the public.

When I entered my father's London practice in 1912, his business was almost entirely confined to the treatment of horses, very little attention being paid to the small animals. Indeed, much too little was known of the diseases of dogs, and even less of cats, in those days. Almost every ailment of either species was usually classed as distemper, and it seemed sufficient to recommend destruction when a diagnosis was unattainable.

But the appearance of the first motor car was really the knell of the horse's doom for, as the years went by, more and more mechanical vehicles took the road and horses decreased very decidedly in numbers. That meant that the very lucrative and busy equine town practices gradually became almost entirely canine.

I well remember, in the years (1910–14) when the police were so active in prosecutions under the Cruelty to Animals Act, seeing as many as five or six lame or sick horses in the Bow Street Police Court yard on almost any day in the week. Those were the days when it was possible to earn up to a peak of £900 per annum in police court fees alone.

Omnibus and cab company horses, Royal Mail, as well as the studs of borough councils, railway and road transport companies, and the big stores, etc., were very lucrative sources of income to the town practitioner, but they gradually all went. No doubt in some of the smaller provincial industrial towns, a proportion of such work may remain for a few years, though it seems doomed to eventual extinction.

As the transition from large to small animals took place, it was manifestly imperative to give the latter a very specialised study, and much credit must be given (rather belatedly) to those pioneers of canine practice—Hobday, Sewell and Cousins. The last was generally attired in morning coat and silk hat, a very creditable example which more of us might have done well to emulate. After all, the canine practitioner *does* interview his clients in their own drawing rooms. The late Sir Frederick Hobday did a very great deal to popularise the professional treatment of the dog and cat. For years he was one of the foremost surgeons in that sphere and, since he led the way, great numbers of our graduates have realised the very real importance of establishing and practising canine medicine and surgery on a sound basis of skill and learning. Thus, there was a gradual disappearance of the leggings and breeches so often assumed by assistants, many of whom were, perforce, more accustomed to examining their patients in a stable than in a private house.

The growth of unqualified practice in the canine field has risen beyond all bounds and it seems at the moment that the surest method of overcoming it is to educate the public to a better knowledge of the qualified man's training and skill, and to teach them to expect the best obtainable for the fees they pay.

Seventeen years ago, with the advent of greyhound racing in this country, many millions of pounds were invested in the dog industry, and an added impetus was given to the study of canine diseases and injuries.

Much more is known to-day of the diseases of the domestic cat, that disdainful but indispensable protector from the inroads of vermin, of our homes and granaries.

The greatly increased employment of radiography in animal complaints has, during the last 15 years, made possible the diagnosis of obscure conditions which previously was quite impossible. So well recognised is this means of investigation to-day that a practitioner might even be held, by a court of law, to have been negligent had he failed to use it. Here again, it is only by the enterprise and foresight of a few veterinary pioneers that X-ray diagnosis in animals has become so popular.

Who would have thought that so large a sum as £30,000 would ever have been subscribed and devoted to the express purpose of investigating the aetiology of distemper? Yet in 1931, through the scientific endeavour of the late Laidlaw and Dunkin, the cause of the disease and the means of its prevention were established. What a boon distemper vaccine and serum have proved to the dog-owning public in late years!—and it looks as though we are even now upon the threshold of curing that most lethal and intractable disease—specific feline enteritis.

A chloroform mask is practically a thing of the past, thanks to that gift of the gods to animals—nembutal. Perhaps equally valuable to animals are the flavines and the sulphonamides as antiseptics.

Advances in surgery have been pronounced and, altogether, the practitioner can look back over the past 25 years with great satisfaction, as a period of the most phenomenal progress in his art and science.

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(*b*) From the Standpoint of a Recently Qualified Woman Practitioner

Canine practice was for many years merely a side-line to the private practitioner, but after the first world war the mechanisation of transport and the decline of agriculture forced the town practitioner, in particular, to look to the small animal for his livelihood. Simultaneously with the decrease in the number of large animals kept in towns, the public took to keeping dogs and cats as domestic pets, and dog breeding became a business. Thus "canine practice" was evolved.

The pioneers in this branch of veterinary science dealt chiefly with the medical aspect, diagnosing and treating the various organic and contagious diseases of the dog, but it soon became apparent that the dog was subject to many conditions requiring surgical interference, and also that it was an ideal subject for surgery.

Surgery.—The work of Sir Frederick Hobday on the administration of chloroform as a general anaesthetic to small animals opened up a large field to the canine practitioner since abdominal surgery was made possible. Later (1934) Professor J. G. Wright published a communication on the use of the barbiturate anaesthetics with particular reference to their intravenous administration. This work may justly be said to have revolutionised canine practice. Instead of surgical cases being transferred to the few "specialists" and to the colleges, the general practitioner is able to undertake the work in his own surgery with a minimum of assistance, since he is now his own anaesthetist, and can command perfect and safe anaesthesia for every operation that he is called upon to perform.

The scope of surgical work is enormous; external operations such as the reduction and immobilisation of fractures, extraction of teeth, and removal of superficial tumours and treatment of abscesses, are met with almost every day, while abdominal interference, particularly for the removal of foreign bodies in the stomach and intestines, and for the reduction of hernia and for the removal of calculi in the urinary tract, is very common. The increase in dog breeding coupled with the complete disregard of the dog breeder for the normal anatomy of the animal has in recent years increased the necessity for surgical interference at parturition and caesarian section has become a common operation in such breeds as Scottish terriers, Boston bull terriers and Pekingese. It is in the surgical field that canine practice has made its most important advances in recent years.

Medicine.—The work in the medicinal field has kept pace with that of human medicine; one calls to mind particularly the advent of the sulphonamides, which are proving of enormous value in the treatment of streptococcal conditions, the use of benzyl benzoate for the treatment of sarcoptic mange, and derris root as an external parasiticide.

Canine Distemper is the most important contagious disease that concerns the canine practitioner. For many years its medicinal treatment was very unsatisfactory, but the research of Laidlaw and Dunkin, with the production of a preventative inoculation, and of a curative serum, has considerably reduced the incidence and the mortality of the disease, and thus has increased the value of the canine practitioner to the dog breeder and owner. Where at one time whole kennels were wiped out by a distemper epidemic, now such a condition need never occur.

Diseases Communicable to Man.—There have been no cases of rabies in this country since 1922; nevertheless, it is the sole canine notifiable disease, and it is possible that the disease may be re-introduced here by dogs brought into the country by air, and evading quarantine regulations. Although tuberculosis is not a notifiable disease in the dog it is now recognised that affected animals are a source of infection to man, and a correct diagnosis of this condition forms a valuable contribution to the health of the human race. The same remark applies in a lesser degree to the diagnosis of sarcoptic mange and ringworm, the latter particularly with reference to cats.

Euthanasia.—Until the publication of the report of the N.V.M.A.

Special Committee on Small Animal Euthanasia in 1937, there had been no authoritative information on this important aspect of the canine practitioner's work. The findings of this committee are of great importance and value, since it is only right that the last service rendered to the canine patient should be as efficient as the treatment given to him during his life.

Greyhound Racing was originated in Chicago in 1917, and introduced into this country in 1925. Since then it has become a national sport, and has given employment to many veterinary surgeons, both as officials at N.G.R.C. tracks and kennels, and also working in breeding and training establishments.

The large amount of specialised knowledge acquired by practitioners concerned with the racing greyhound, particularly with reference to the diagnosis and treatment of lameness, has proved of value to general practice.

Animal Societies.—Certain of these societies employ veterinary surgeons for the treatment of sick animals of the poor, both in centralised clinics, and by payment for services rendered at the practitioner's own establishment. The Royal Society for the Prevention of Cruelty to Animals, for example, opened their first clinic in Liverpool in 1917, and now employ veterinary surgeons in about 80 clinics. While no veterinary surgeon refuses treatment on the grounds that the owner cannot afford to pay his fee, these societies enable him to treat a much greater number of such cases than he could do without their aid.

Examination for Health.—The important task of certifying dogs as healthy for export is carried out by the veterinary surgeon. In the peak years of dog breeding, from 1925–38, many of the best British types were exported to improve the breeding strains in other countries. On the veterinary surgeon also devolves the responsibility of examining dogs and cats for entry into shows and thus preventing the spread of contagious diseases.

Present-day Conditions.—At the outbreak of war, canine practice suffered a sharp decline when a large number of the small-animal population was destroyed. Since then it is regaining its original position, with the increasing problem of the treatment of nutritional diseases.

The canine practitioner is also being called upon to treat an increasing number of cats as well as backyard pigs, rabbits and poultry.

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(vii) Greyhound Racing Practice

In 1926 greyhound racing was introduced into England and was partly sponsored by a veterinary surgeon, the late Major Lyne Dixon. From the beginning it was evident that if the sport was to be successful every effort would have to be made to control it carefully, particularly with regard to the care of the greyhounds taking part.

Veterinary surgeons were appointed to act in official capacities on each track as it opened and the ultimate success of the venture is due in no small measure to the ability and integrity of the members of the Royal College of Veterinary Surgeons who were so employed and to the presence on the controlling body, in the infancy of the sport, of an able and respected member in the late Sir Frederick Hobday.

Few members had any working knowledge of the greyhound in 1926, but by 1944 it is estimated that some 150 graduates derive some income from the treatment and care of racing dogs attached to tracks. Much knowledge has been gained from observation and close contact. This has been passed on to the profession at large through the medium of veterinary society meetings and the columns of *The Veterinary Record* and *Journal*.

Of very great interest to members of the older school of thought is the effect on the teeth, weight and speed of the dog fed entirely on a liquid diet through its life. Valuable information was at hand on the amount of protein in the form of meat which is necessary to be fed to dogs of known weight in order to allow them to be raced at maximum speed with little weight variation over a period.

Probably the matter of greatest interest was the study of the psychology of the racing greyhound. Not all greyhounds chase the artificial hare and there are often extraordinary differences in the members of any one litter. Many dogs bred from racing parents refuse even to look at the artificial hare whilst some which race regularly pay little heed to the live hare.

Altogether it may be said there is a large field of observation still to be explored in the greyhound racing world of great value to those interested in the canine species. It is a matter of gratification that the field is safely held in the hands of qualified veterinary surgeons and has not been invaded by the unqualified element.

(viii) Poultry Practice

During the period since the granting of the Charter, poultry and poultry husbandry have undergone outstanding changes. In the early part of Queen Victoria's reign, the poultry of this country were represented by the barn-door fowls which ranged around the homestead on the general farms and fed on damaged grain.

Fanciers developed an interest in fowls for exhibition purposes and using the Dorking fowl, established here since the Roman occupation of England, and imported birds, breeds were established. From this work in about 1890 the poultry industry began to take shape.

In 1913 the poultry stocks in this country numbered about 33 millions, but this number was greatly reduced in the war of 1914–18. With the return of the conditions of peace the numbers were rapidly increased and in 1934 totalled about 69,358,900.

The development of specialised poultry farms and the establishment of large hatcheries provided the means of this rapid growth. When stocks are kept in large units, disease often becomes the limiting factor in the progress of the farm.

The investigation into the incidence of poultry diseases and the aetiology of these diseases was primarily initiated in this country at the Veterinary Laboratory of the Ministry of Agriculture when the institute was founded in 1915. Other laboratories then offered facilities for routine *post-mortem* examinations, etc., in addition to the help given by general practitioners, some of whom had a great interest in poultry stocks and some knowledge of poultry diseases, and had given for years yeoman service to breeders and fanciers.

Later the Veterinary Investigation services were created, and many of the officers in this service have carried out a certain amount of investigation into the diseases of poultry.

The N.V.M.A., at the request of the Chief Veterinary Officer of the Ministry, encouraged the spread of knowledge among the members of the profession by means of lectures and demonstrations at the meetings of their branches. Further, the N.V.M.A. called together a committee of members of the profession who were engaged in poultry disease investigation, and following their labours the handbook on poultry diseases was issued to all members for their guidance.

During the past three years the Ministry have organised intensive courses of training in poultry diseases for large numbers of their veterinary inspectors who deal with poultry disease investigation work in the field.

Undoubtedly by all these means there has been a fruitful dissemination of knowledge of the diseases of poultry among the veterinary profession in this country and their services are becoming increasingly appreciated by the poultry industry.

It is, however, a fact that the diagnosis of many of the diseases of poultry cannot be made without the facilities of a laboratory. Bacteriological and serological examinations and animal inoculations are essential in arriving at a true diagnosis of many diseases of poultry. Veterinary surgeons in general practice now frequently investigate outbreaks of disease in poultry and forward birds, dead or alive, to a veterinary laboratory for the diagnosis to be made or confirmed, and this system works admirably. The veterinary surgeon keeps in touch with his clients and can give valuable assistance to the owners; at the same time he has all the facilities of a veterinary laboratory at his disposal.

In the period following this war when the poultry stocks will increase again once suitable foodstuffs are available in quantity, all veterinarians should be in a position to meet the demands of the poultry owners for advice on disease control and eradication.

Original research work into the diseases of poultry was first made by Pasteur in his investigation of fowl cholera, and following this early work investigators in all parts of the world have made valuable contributions to our knowledge.

The "field" is large but unfortunately the workers in this country are few—but those who have worked on poultry diseases in Great Britain have added their valuable quota of first-class work.

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(ix) A General Review of Veterinary Practice

(*a*) From the Standpoint of a Recent Graduate

The general practitioner has played a far more important role in the development of the veterinary profession in Great Britain than in the continental countries. One of the chief reasons for this has been the peculiar lack of official financial support for veterinary educational and research institutions, but in order to appreciate the present status of practitioners in Great Britain it is necessary to give a very brief outline of our development during the 19th century.

After a brilliant start in 1791 the course of instruction at the London College was reduced to only a few months and no attention was paid to any animal but the horse. After a few years graduates who had gained experience in practice realised the great deficiencies in teaching and an agitation for reform was begun. At this early stage there was no periodical literature or corporate body forming a link between practitioners, but as the need became apparent it was met. Percivall and Youatt launched *The Veterinarian* (1828) in which a vigorous campaign for educational and professional reforms was conducted. It was largely due to the efforts of a few enlightened practitioners who contributed to this journal that a body of clinical knowledge dealing with the food animals was built up.

At this time the two schools, London and Edinburgh, granted their own diplomas to practice, and it should be emphasised that under Dick at Edinburgh a sound practical training in the diseases of all the farm animals was received. There was, however, much rivalry and discord between the schools, and it was a triumph for the practitioners when, as a result of the Royal Charter of 1844, they were formed into a body corporate and given power through the Royal College to lay down educational standards and conduct examinations. Many difficulties were encountered and the Royal College had a precarious existence until it was given much more authority by the Veterinary Surgeons Act of 1881.

Quotations from editorials by Hunting in 1892 well illustrate the part played by the practitioner in all this development: "Every year this subject (veterinary education) comes up for discussion and it has been so as long as we can remember. It must ever remain so. . . ." "It is rather remarkable that during the last three years . . . when societies have been vigorously discussing our position and our prospects and when the members of the body corporate having shown by their votes that they are determined on change and bent on progress—it is remarkable we say how seldom the voice of the schools has been heard. . . . It is impossible to make the best arrangements for examination of candidates for our diploma unless we have the assistance of the teachers. . . . Even the Council (R.C.V.S.) will have to consider our professional examinations but prior to this we should know what the profession want, and what the schools approve."

Much the same can be said of official preventive medicine; practitioners played a vital part, as local inspectors, in the eradication of pleuropneumonia and cattle plague, and in glanders, at least, a group of London practitioners conducted a campaign of many years' duration to urge the Board of Agriculture to take effective action to control glanders. When the methods they advocated were at last enforced, the disease was rapidly brought under control.

It will thus be seen that for various reasons, not least of which was the leadership provided by a few outstanding men, practitioners have come to exercise, through the Council, R.C.V.S., a controlling influence over veterinary education and professional affairs. This same degree of control does not exist in other countries where it may be said in a general way that the colleges and the State have dominated the profession. During the last 50 years as the colleges have received more financial support, it is probable that their influence has increased, and this tendency is likely to continue if the fundamental importance of conducting research at educational institutions, so that the best men are attracted to their staffs and the students receive inspiration as well as instruction from their teaching, is fully realised.

During all this period, except when the great epidemic cattle diseases were active, the horse was by far the most important animal requiring attention—the whole transport system of a country has been almost reduced to a standstill by equine influenza. With the development of mechanical transport and power in the town and on the farm, which was accelerated by the last world war, the horse rapidly declined in importance. This, combined with the agricultural depression, caused much hardship in country practice. Many areas would have failed to support a practitioner if it had not been for part-time appointments under the local authorities and the Ministry of Agriculture, and the development of small-animal practice. Hard words have been said about "the dog and cat outlook," but one should not overlook the fact that by this means many a practitioner was able to subsidise an agricultural practice, and farmers were still able to call in a veterinary surgeon instead of relying on a quack. Further, although it must be constantly kept in mind that our most important work is with farm animals, domestic pets play an important part in the life of many British families, and it is right that when they are unwell skilled professional advice should be available. Because of their sentimental value expensive treatment can sometimes be carried out and new anaesthetic and surgical techniques have been evolved. Some graduates have chosen this work because of the larger scope for surgery. Gradually, however, more attention was paid to the increasing number of dairy herds, and to the diseases and management of sheep, pigs and poultry, and with the revival of agriculture country practice steadily improved. Before the Agriculture Act (1937) veterinary public health work was developing rapidly and might easily have played a vital rôle in professional development.

Following the new Agriculture Act considerable employment was provided for many country practitioners, but there was no real change of policy on the part of the Ministry, and even the outbreak of the second world war and the greatly enhanced importance of livestock failed for a long time to stimulate it into extra activity. True to British veterinary tradition the impetus for advance came largely from practitioners and independent research workers, the Survey Committee was formed and eventually the Panel Scheme evolved in an attempt to deal with the major diseases of dairy cattle; and the possibility of combating the diseases of other animals is being considered.

About 1,500 of the 2,000 active veterinary surgeons in Great Britain are engaged in general practice. It is probably true that the majority of practices are still run by one man and that without part-time Ministry work many practices would cease to exist and there would be large agricultural areas where professional assistance could not be obtained—the work of the whole-time Ministry staff is restricted to executing the official Acts and Orders. During the last 20 years the number of practitioners, both men and women, specialising in small-animal practice has considerably increased, and the general standard of treatment, both medical and surgical, has steadily risen. These town practitioners, however, now have to face unfair competition from large organisations supported by voluntary subscriptions and which are not governed by any considerations of professional etiquette. A few practitioners make a special study of the thoroughbred horse and hunter, but the majority are engaged in the general work of an agricultural practice, the cow being the most importand animal. Advice on herd management and the control of herd disease is becoming increasingly important but the present financial relationship of practitioner to farmer makes effective preventive medicine difficult. In contrast to the agricultural adviser the practitioner has to charge a fee whenever called in, with the result that he is often not consulted when he could give valuable advice, and there is a tendency to consult agricultural advisers concerning subjects in which they have received no special training. Further, owing perhaps to too great a professional reticence, farmers in some districts are not aware of the services which can be rendered by the profession. There is a proportion of British farmers for whom the quack and quack remedies have a great attraction, and some firms are now selling biological products direct to the farmer. Under some system of contract practice, many of the above difficulties would be eliminated and the very desirable education of farmers in the problems of disease control would have much less tendency to encourage treatment by unskilled persons. A war-time development which may become permanent is the "backyard" livestock industry. Many practitioners have become interested in this work and have been able to give valuable advice on management and disease control under these somewhat strange conditions.

The diagnosis of pregnancy, treatment of infertility, obstetrical assistance, and the usual medical and surgical procedures, still provide ample scope for the individual clinical treatment of the bovine. With sheep, pigs and poultry it is usually outbreaks of disease in the herd that have to be dealt with, and on these occasions, as well as when dealing with epidemics in calves and cattle, the practitioner is often confronted with problems which, for their solution, require a very full and wide knowledge of medicine, and keen powers of observation and reasoning. Laboratory assistance is often not available; it may arrive too late or be of little value unless there is a worker particularly interested in the disease. Despite all the difficulties, however, there are men endowed with great natural ability who have kept abreast of practical advances in all these fields, and as a result of long experience and keen clinical observation are usually able to arrive at a sufficiently accurate diagnosis and thus to apply effective remedial measures. These men have gained the confidence and affection of many farmers in their district and have also made a notable contribution to research, first by defining clinical entities, and then by their co-operation with laboratories often carried out at considerable personal inconvenience and expense.

It is due to the existence of an independent body of practitioners that veterinary research workers and others with whole-time appointments usually receive better salaries than many other scientists. Indeed, it should be emphasised that without a large proportion of practitioners both the profession and the N.V.M.A. would cease to exist as independent bodies.

The part played by the practitioner in professional development had been described and must be carefully borne in mind when considering any future developments, but we are living during a time of unprecedented change and methods which have been suitable in the past may be found inappropriate to deal with future problems.

It is impossible to make any detailed prediction of conditions after the war, but it is already obvious that vast areas abroad which were formerly purely agricultural will be largely industrialised, and

this is bound to affect our import and export trade. Further, it would appear that one of the post-war priorities will be adequate food for all; it therefore seems reasonable to believe that a more intensive and more efficient livestock industry, probably linked to ley farming, will be developed after the war to meet the need for high-quality protein and protective foods for home consumption. We have already discussed the difficulties with which the practitioner is faced, and it may be that an entirely new type of service will have to be developed to meet the needs of post-war agriculture.

Some tendencies are already visible: there is a general realisation that partnership, or even some form of co-operative practice, is desirable. This has been made possible by rapid transport, and would give facilities for a greater degree of personal freedom and specialisation. Specialists are beginning to develop to meet certain needs, veterinary officers have been appointed to study the problem of infertility in cattle, and the Animal Health Division is giving post-graduate training to persons who will then specialise in the control of poultry diseases. The number of veterinary investigation officers is increasing, and in some areas at least it is becoming easier to obtain specialist clinical and laboratory assistance. It is possible that regional laboratory and clinical centres will eventually develop, which will be able to provide the practitioners with the specialised assistance which may be necessary to meet the needs of livestock production. It is also noteworthy that far more money is being made available for veterinary research, and the Loveday Committee has reported. It is to be hoped that much of this money will eventually find its way to the colleges whose equipment and staff, with little extra expense, serve the double purpose of providing facilities both for research and teaching.

The Panel Scheme has overcome some of the disadvantages associated with private practice, and because of the changed financial relationship veterinary surgeons are now in a better position to advise farmers on questions of general herd management and disease control. It may be that the Panel Scheme will increase in scope without altering essentially in character, but the present tendency for centralisation of control cannot be overlooked, and it may be that a more co-ordinated method of approach than can be provided under this scheme will be necessary. If greater organisation is necessary, the establishment of an independent corporate body appears to be looked on with favour by some members of both the veterinary and medical professions, but it appears from the negotiations now taking place with the medical profession, as the result of the Beveridge Report, that Government and Parliament are insisting on direct control through the Minister of Health. If it were decided that this degree of organisation is necessary for the efficient promotion of animal health, the possible dangers to individual initiative and enterprise need no emphasis here. Perhaps the only solution to this and many other problems will be a complete change in the methods and organisation of the Civil Service. In the Animal Health Division the most important change would be the restoration to the C.V.O. of his former powers. Sir George Brown was directly responsible to the Minister; this gave him the power of suggesting and initiating the methods required for the control of disease. On his retirement a change was made, and a lay administrator, who, under Sir George Brown's administration, had been one of the lay inspectors responsible for the disinfection of trucks and markets, was made head of the Diseases of Animals Division, and the function of the new C.V.O. was to advise on purely professional questions—when asked. It is still generally true, although the realities of war are tending to correct it, that the "administrator" without any special qualifications is given more authority than the man who has the expert knowledge to grapple with a problem.

This interpolation has only been dealing with a possibility and has no direct bearing on general practice. Whilst it is necessary to present all possibilities it is very likely that there will be plenty of scope for both private and public enterprise working side by side.

It was stated at the beginning of this article that practitioners in Great Britain have always taken an active interest in education, and it may not be out of place here to observe that events of the last 20 years have made it abundantly clear that the cow and not the horse is now the most important animal with which we have to deal. This should involve a complete change of emphasis in all our teaching, particularly in anatomy, physiology, pathology and medicine. One wonders whether the examination of a cow for the diagnosis of pregnancy and treatment of infertility is not now a more important subject for special attention in the final examination than the examination of the horse for soundness.

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(*b*) From the Standpoint of a more Senior Graduate and Teacher

A hundred years ago wise and far-seeing men joined together to found the R.C.V.S. and so take the first steps by which those who practised the veterinary art would be recognised as members of a learned profession. As the years have gone by a great tradition has been built up, many privileges have been obtained and the status of the profession has increased steadily.

Now we who are Members or Fellows of the R.C.V.S. are the rightful heirs of these things and it is meet that we should take stock of the position as it exists to-day in order that we may ascertain if we are worthy of this great inheritance and if we are doing our duty by the profession which gives us life.

I will not worry my readers by discussing the various political, educational or even professional controversies which beset us to-day, for I am one who believes that if the spirit of the members of the profession is set in the right direction these things will resolve themselves in due course.

It is the spirit of the members which is all important. I regret the passing of the pioneer spirit—that something which urged a young man to choose and plan a career and to negotiate the various phases of that career under his own power.

Our profession is indebted in the highest degree to its pioneers, men of courage, resource and independence. When I first came in contact intimately with the profession there were many holding the highest positions who, one and all, had attained that status as the direct result of their own efforts. They were men of whom we could be proud; they were competent, proud of their own success and veritable leaders of men. If one studies the history of the profession it is obvious that those who had gone before them were men of the same calibre. They made a profession that was virile, one which was the equal of any other and whose competence and authority was recognised by the public.

What do we find to-day? The sturdy pioneer has gone and we tend to become regimented or graded all to one level. Many of the students who come to our college have not a plan of their life in mind; in fact, I have been astounded on many occasions when, as is my custom, I have put the following questions, "Why do you want to be a veterinary surgeon?" or "Why did you come to a veterinary college?" to receive the reply, "I don't know," or, "Father thought that there might be an opening," or, "I wanted to join a profession and we thought that this would be the easiest."

What manner of people are these to play a full part in an occupation which must have or give rise to a vocational call, urge or desire, just as much as the Church? I find that the average student has little ambition and even those who do possess some ambition want to attain their modest goal on easy terms and, above all, at no great sacrifice or effort on their part.

Now this is a state of affairs which is not peculiar to the veterinary profession. I have a strong suspicion that it is the direct result of the modern tendency to expect the State or some other body to shoulder the duties and responsibilities of the parent, guardian or the individual.

Whilst such a spirit prevails a profession will not recruit those who have the pioneer independent spirit; rather its ranks will be filled by mediocrities who will take the easy way and fit in with the rules and regulations laid down by whoever pays the piper—in most cases the State.

I am of the opinion that this system, which has come upon us so insidiously, is responsible for the dearth of really outstanding men amongst our leaders—a dearth which was certainly not in evidence 100 years ago, or even as late as 20 years ago.

These are the thoughts which come uppermost in my mind when I sit back and contemplate our centenary.

IX. Women in the Veterinary Profession

It is probably not generally recognised that the entry of women into the veterinary profession began nearly half a century ago with the passage of that pioneer of the sex, Miss Aileen Cust, through the course at the Edinburgh College, finishing in 1900. In spite of the fact that Miss Cust completed the course she could not be admitted to the profession until after the passing of the Sex Disqualification (Removal) Act by Mr. Baldwin's Government in 1919. This Act made women eligible for entry into all professions, thus no alteration in the R.C.V.S. Charter was needed. Miss Cust, who in the meantime had been engaged in practice, thereupon took a short revision course at the Royal Veterinary College, London, formally passed the final examination of the R.C.V.S. and was admitted to the profession as a London graduate in December, 1922. In view of the widely held opinion that the sphere of women in the veterinary profession must be largely confined to small animals it is of interest to note that Miss Cust was regarded as a highly successful practitioner in mixed practice.

By 1934 all the colleges with the exception of the "Dick" were admitting women, the first to do so being Liverpool, and it was from that college that Miss Knight qualified in 1923. From that time until the early nineteen thirties the entry of women was spasmodic, but after Sir Frederick Hobday became Principal of the Royal

Veterinary College in 1927 the entry of women, especially at the London College, was considerably increased. This influx was undoubtedly due to the rather rosy prospects envisaged by Sir Frederick Hobday for women working mainly in small-animal practice, and to the not inconsiderable Press publicity given to this development in the profession. By 1934 the names of 34 women were on the Register, and at the time of writing, ten years later, the number stands at 186. Of this number no less than 116 have graduated from the London College, the balance comprising 33 Liverpool graduates, 24 from Glasgow and 13 from Dublin. It is clear from these figures that although the impetus given to recruitment by the late Sir Frederick Hobday must have passed, the profession continues to attract to its ranks a steady entry of the female sex.

Whilst it is true that the majority of women practising veterinary medicine are engaged largely with small-animal work in towns, it has always been maintained by the women themselves that they are able to undertake competently the work of mixed, or even an entirely agricultural practice. The opportunity to substantiate this claim has to some extent arisen during the last two years of this war, owing to the unexpectedly urgent demands of the R.A.V.C. upon the ranks of male practitioners. Many principals of mixed practices who have hitherto engaged all male assistants are now employing women to replace them, and although it must be left to history to decide, it may with fairness be said that these women, in addition to those already engaged successfully in mixed practice, have amply justified their claim to be considered on their own account veterinary practitioners in every sense of the word.

The ranks of research workers have claimed several women, including the first woman graduate from the London College (excluding, of course, Miss Cust), Miss A. W. Greener, who, proceeding to the Dip. Bact. after qualifying M.R.C.V.S. in 1930, became a member of the staff of the Research Institute at Camden Town. On the whole it may be said that the women who have entered the realm of research are fewer than might have been expected, especially in view of the academic distinction gained by several of them, notably Miss M. Oyler, of London, who achieved the outstanding feat of the triple crown, the FitzWygram, Williams and Walley Prizes, in 1932 and 1933.

In 1941 the desirability of forming a society for women veterinarians was considered by certain members, and following the circulation of a letter to all women members, a meeting was held in October, 1941, to consider this project. As a result the Society of Women Veterinary Surgeons came into being, this now being the most junior, but none the less active, Division of the N.V.M.A. The place which the women of the profession, collectively and individually, have attained, together with the steady recruitment to their ranks, justifies a spirit of reasoned optimism in considering the future in so far as women are concerned.

X. British Veterinary Periodicals

The first British veterinary periodical to become well established was founded in 1828 by William Percivall, who was soon joined by W. Youatt, and was entitled *The Veterinarian*. An important function of the journal was to publish clinical observations from practitioners, and so build up an accepted body of clinical knowledge relating to the domestic animals. The other aim was to arouse and unify the profession. The London Veterinary College through the grant of its Diploma, had long exercised dominant control over affairs under its Principal, Coleman, but it was falling into a bad state of disrepute for many reasons. It was failing to give any instruction on diseases of animals other than the horse. The course was reduced from three years to a few months; the veterinary surgeons themselves were excluded from any control over the examinations and from becoming subscribers to the College and had no voice in managing their affairs as a legally recognised, corporate body. The agitation, largely kindled in *The Veterinarian*, gave rise, as described earlier, to the movement which culminated in the Charter of 1844.

Continental veterinary literature was founded and dominated by men established in officially paid posts at the teaching centres. Characteristically, on the other hand, the foundation of British veterinary literature was the result of a spontaneous movement for reform within the rank and file of the profession ably directed by a man of rare intellectual and journalistic gifts, William Youatt. It has been said, upon good evidence, that the standard of clinical writing at that time, was far better than it is to-day, so far as it went, and that the apparent decadence in clinical insight may have been attributable, in part at least, to the excessive domination of non-clinical subjects in the curriculum, which occurred later. In the early part of the last century, controversy was by modern standards bitter and carried to far greater lengths than it is now, but the literary, professional and moral standard of *The Veterinarian* portrays the character and ability of the early practitioners, and above all of the two editors. They collected information concerning the courses of study at the continental schools and compared them with that at London. They continually strove for unity and a sense of corporate responsibility within the profession.

When, at last, in 1844, the Royal Charter of Incorporation was granted, it was printed in large type in *The Veterinarian* and hailed as representing the coming of the golden age for the profession, an anticipation which, to the dismay of the editors, remained for long unfulfilled. In the words of the editors, "the granting of the charter will prove one of the greatest steps for the advancement of veterinary science ever accomplished in this or any other country." Then began the publication of the proceedings of the R.C.V.S. council meetings, which together with the proceedings of the local divisional meetings, make it clear that a new sense of unity was developing. This corporate spirit was greatly stimulated by the granting of the Charter, but Youatt and Percivall little realised the controversy and strife which would follow before their labours really bore fruit. *The Veterinarian* continued its inspiring mission until Percivall's death in 1854 when it was taken over by the staff of the London College. It then changed in character and thereafter, gradually through lack of inspiration, lost all real hold on the temper of the profession.

Unity was finally brought about largely by the personal efforts of George Fleming (1833-1901) (as has been earlier stated), another veterinarian possessed of great energy and rare intellectual and literary gifts. Again his chief instrument was a journal, namely, *The Veterinary Journal*, which he founded in 1875, and maintained at a high standard for many years. One is struck by the extensive knowledge of the current continental literature and the old classical literature displayed in the early veterinary periodicals. With the relative starvation of British veterinary education it was from such sources that the profession largely derived its knowledge. In 1881 Fleming achieved his main objective with the passing of the Veterinary Surgeons Act, but continued the heavy task of editing the journal until 1894. Both Percivall and Fleming were military men, and so, as F. Smith has rightly said, "From 1828 to 1894 the profession was largely indebted to the military service for its monthly literature."

In the meantime perhaps the most brilliant of veterinary periodicals, *The Edinburgh Veterinary Review*, was founded in 1858 by John Gamgee and continued under his editorship until 1865 when publication ceased. It was founded with the main purpose of drawing attention to the disastrous losses caused by epizootic disease in Great Britain, largely due to importation of cattle from the continent, and of arousing public opinion so that legislation could be introduced to prohibit the trade in live cattle from the continent with the attendant grave risks of introducing cattle plague (rinderpest) and prevent the consumption of diseased meat. Information concerning the "Health of Livestock" in each county of the three kingdoms was privately collected and published. Under the brilliant editorship of John Gamgee, at first assisted by his father Joseph, *The Edinburgh Veterinary Review* contained some of the finest writing in our professional literature. More than anything else it contributed to the establishment finally, after the cattle plague outbreaks which eventually occurred, in spite of its warnings, in 1865, and which were only eradicated at enormous cost, to the establishment of what has grown to be the Animal Health Division of the Ministry of Agriculture.

The Veterinary Record and the *Journal of Comparative Pathology* were founded in the same year, namely, in 1888, but they were very different in character. The *Record* was an enterprise founded privately by one of the most beloved men who have lived in the veterinary profession, the late William Hunting—again a man of rare intellectual and journalistic gifts, and Gamgee's outstanding pupil. It was a weekly journal for the profession. Whilst most matters of scientific interest were ably commented upon in the weekly editorials, it was essentially a professional journal and from its pages a picture of the real life of the profession can be obtained, as could never be seen in the weekly continental journals, run by teaching staffs, in spite of their apparently far higher scientific standard. It was written in such a way that it held the interest of the average practitioner and during a period of rapid scientific advance was a valuable instrument of education and of ensuring professional cohesion while there were forces abroad that so much tended to disintegration. Regular reporting of professional affairs maintained and stimulated the sense of unity throughout the profession. The *Record* became the official journal of the N.V.M.A. in 1921.

In its early years the *Journal of Comparative Pathology* also contained items of professional news, but it was essentially a scientific journal—the first in this country devoted to veterinary pathology—and it expressed the views of one man; little can be learnt of the general life and work of the profession from its

pages. For 50 years Sir John McFadyean rendered a great service by publishing detailed scientific papers which were hardly suitable for the more professional journals; fortunately this task is being continued. At one time notable features of the journal were the valuable abstracts and translations of Continental articles, and the forceful editorials which certainly at times dealt with professional as well as scientific subjects. For lucid exposition and penetrating criticism the writings in this journal, during its early years especially, remain models of literary style and brought to the profession a respect that was international.

To deal with the rapid accumulation of knowledge that was in process of acquirement, but since then has not been gathering the momentum that was anticipated, *The Tropical Veterinary Bulletin* was founded as a quarterly abstract journal under the Tropical Diseases Bureau in 1912. The valuable work done by it was, however, afterwards incorporated in *The Veterinary Bulletin*, a monthly abstract journal covering the whole of the scientific veterinary and cognate literature. This was founded under the auspices of the Imperial Agricultural Bureaux in 1931. Afterwards, the *Bulletin* was supplemented by the issue of the *Index Veterinarius* in which the titles of all articles bearing on the scientific veterinary field are listed. The unversed reader is commended particularly to a perusal of the *Index* to ascertain how enormously the literature bearing directly or indirectly on the veterinary field has grown within recent years. Both the *Bulletin* and the *Index* are rendering a service which is immeasurable to the veterinary research worker, and those who were employed in research in the early years of the present century and recall the difficulties of obtaining access to the published records of other workers, can testify to the boon conferred on present-day workers by the regular issue of these publications and their dependability.

The Journal of the Royal Army Veterinary Corps, founded in 1930, is a quarterly publication devoted to the interests of the military branch of the profession, and, as a journalistic venture for that particular end, it ranks very high in the esteem of its subscribers at home and abroad.

In the overseas Empire there are now circulating several veterinary periodicals of high repute.

In India, *The Journal of Tropical Veterinary Science*, a quarterly journal founded by Pease, Baldrey and Montgomery, reached high standards during its all too brief career. *The Indian Journal of Veterinary Science and Animal Husbandry*, a quarterly, published under the aegis of the Imperial Council of Agricultural Research, was founded in 1931. *The Indian Veterinary Journal*, edited by Srinivasa Rao at Madras and founded in 1921, is devoted largely to the Indian Veterinary Association and to original contributions from Indian veterinarians.

Until the *Canadian Journal of Comparative Medicine* began to appear recently, in 1937, the only Canadian journal was the *Canadian Veterinary Record*, published since 1920 by the Ontario Veterinary College.

The Journal of the Australian Veterinary Association, the quarterly organ of that Association, which was founded in 1924, has reached a high place, particularly for the standard of the work recorded in it upon sheep diseases.

The veterinary literature of South Africa for many years stood out pre-eminently for its contributions to the advancement of veterinary knowledge by means of research. This is seen from the beginning in the excellent *Reports of the Government Bacteriologist*, published by Theiler and his school from 1906 onwards and later, after 1928, known as *The Annual Reports of the Director of Veterinary Services and Animal Industry*, and, after 1933, continued as the quarterly publication, *The Onderstepoort Journal of Veterinary Science and Animal Industry*. The South African Veterinary Medical Association has published a more professional type of *Journal* since 1930.

From all State departments, at home and in the colonies, much valuable veterinary information has been forthcoming, though more especially from home sources one could sometimes wish for an improved flow.

It can be seen, therefore, that our periodical veterinary literature has grown and changed in character to meet new needs. There can be no doubt that it has been a most potent force in the founding and the moulding of our professional institutions, and, above all, in the creation and strengthening of the Royal College of Veterinary Surgeons. Indeed, it is doubtful whether our corporate existence could have been maintained and the supply of essential knowledge provided for its justification, were it not for the devoted labours of the talented men who created and strove to maintain it, often in conditions of grave difficulty. There can be no doubt whatsoever, that to continue it at the highest possible standard is a duty that can never be taken too seriously.

The words published editorially in the first volume of *The Veterinarian* (p. 177), in 1828, are as significant to-day as when they were written. They point to the plain duty of every individual in the profession towards the periodical literature of his profession if it is to thrive. They point, moreover, to the courtesy that must always be extended reciprocally to that individual whenever he strives of his best to contribute to that literature:—

"On the patient accumulation of experiment and fact must our ultimate improvement be founded. We cordially entreat the co-operation of our brethren so long as we are deemed worthy of it: and every communication shall receive due and grateful consideration. Our cause is theirs: and without their support our literary existence must speedily terminate."

XI. The National Veterinary Medical Association: Its Role in Supplementing the Activities of the R.C.V.S. Council

It is no part of our duty on this occasion to enter into a share of the celebrations that it is our whole object to reflect, through the medium of this special number, on the parent body upon the attainment of its centenary. Nevertheless, we feel we shall have incompletely discharged our duty to our readers if we do not display what are the proper functions of our own Association within a somewhat different sphere in supplementing the activities of that body.

The story of the movement which led to the foundation of the N.V.M.A. is detailed in the Proceedings of the British National Veterinary Congress, 1881. In August, 1880, it became evident to the small body of veterinarians attending the sittings of the Public Health Section of the British Medical Association in Cambridge that much information in the profession was not yet accepted by our medical confrères and consequently they discussed plans for the formation of a veterinary association. This idea was encouraged by the fact that on the Continent in various countries gatherings of veterinarians had been recently held with marked success. The project was further encouraged by the growing unity in the profession in the United Kingdom which followed the admission of the Highland and Agricultural Society's graduates to membership of the Royal College of Veterinary Surgeons on such terms that they were availing themselves of the opportunity in very large numbers. Lastly, the proceedings at several meetings of local veterinary societies had rendered it evident that some opportunity should be given of ventilating professional subjects of national importance. A scheme was drawn up and submitted to those gentlemen who most approved of the project, and thus was laid the seed for the growth of the National Veterinary Medical Association of Great Britain and Ireland.

As mentioned in the appreciation of the late Geo. Amos Banham (Edwards, J. T. *Vet. Rec.* **53.** 98), "The task of converting this idea into the action which soon brought about the gathering of a representative Congress of veterinarians was evidently undertaken by the two young honorary secretaries who prepared the proceedings, namely, G. A. Banham and J. H. Steel. . . . The Originating Committee of the Congress, composed of nine Secretaries fairly allocated for various regions and interests, at home and abroad, met in London at Christmas, 1880, and the subsequent Provisional Committee was formed with four sections covering the areas in which veterinary associations already existed, so as to enlist their active support in the movement for a central Congress." This, then, was the germination of the conception, not only of the formation of a British Veterinary Association, but of the holding of an Annual Congress, a function which rapidly became an invaluable focus of the scientific and social interests of the profession. It has also, through its Divisions, provided a series of platforms throughout the country for the expression of individual opinion.

At this first Congress, held at the Royal Society of Arts, Adelphi, London, Mr. Banham read a paper entitled "A Scheme for the Forming of a British Medical Veterinary Association." In this he outlined the importance to the success of the national body in so small a profession, of the willing assistance of the existing Societies who in return should be able to offer their members some advantages, if possible the "National" becoming the grand connecting link between them. Following the proposal passed at the 1881 Congress, the First General Meeting of the National Veterinary Association came to be held, again at the Adelphi meeting place, on May 8th, 1883, under the presidency of Dr. Fleming. A Committee, representative of the existing 13 local Veterinary Medical Societies, the Colleges and the Army Veterinary Department, was set up to plan rules for the guidance of the newly-formed Association. The secretarial work was carried on by Banham, as Steel had left for India.

In 1890 Banham was succeeded as Secretary by John Malcolm, to whom also the Association was to lie under a deep debt of gratitude for a number of years. In 1912 the first reconstitution of the "National" took place, federating the local Associations, to pursue certain aims and objects necessary for promoting the interests of

the corporate body other than those assigned to the Royal College by Charter and Act of Parliament.

For several years the Association confined itself to the holding of annual meetings, which were largely restricted to the discussion of professional subjects, until at the 36th General Meeting of the Association, held at the original meeting place on October 31st, 1919, the National Veterinary Medical Association was launched in its present form of a federated professional organisation, with all-embracing functions for promoting the welfare of the profession.

In 1920, under the guidance of such stalwarts as Dr. Bradley, Professor Buxton and Professor Geo. Wooldridge, the opportunity was taken finally to link up British Veterinary Societies at home and abroad in a parent Association and a limited liability company was formed. This representative organisation of the N.V.M.A., with its constituent divisions, now provided an effective liaison between the Council and the Societies, so that local opinion could be adequately voiced. After William Hunting's death in 1913 the journal started by him in 1888 was taken over by the Association and from 1921 *The Veterinary Record* became its official organ. Office accommodation was now essential—hitherto the N.V.M.A. had officially been homeless—and two small rooms were acquired in Buckingham Palace Road, with a staff in the form of two clerks, with a Hon. Secretary (Professor Buxton) and an Hon. Editor (Dr. Edwards). Stimulated by the purchase of *The Veterinary Record* the membership, which was 175 in 1881, rose very rapidly from 375 to 1,115, but although the annual income similarly increased from its initial £100, the Association had no investments apart from the goodwill of the paper. By 1923 the posts of Secretary and Editor had been combined and undertaken by an honorary official in the person of Mr. G. H. Livesey, who laboured both late and long at his dual task, with the aid of a paid assistant, Mr. W. Brown, then not yet a veterinary surgeon. It was during the period between 1922 and 1925 that the various local veterinary societies all agreed to become divisions of the central body, although not always without reluctance, and the National Veterinary Medical Association was reconstituted and incorporated as the National Veterinary Medical Association of Great Britain and Ireland. In due course additional overseas veterinary societies sought affiliation and became Divisions.

In 1925 the Association left its cramped quarters and moved to a three-room chamber in 10, Gray's Inn Square. The membership then stood at 1,514; the income of the Association had increased from the £700 in 1920 to £5,000 while investments to the extent of £1,500 had been made. For 15 precarious years the Association's finances had been husbanded by the Hon. Treasurer, Professor G. H. Wooldridge, who was now able to relinquish this office with the knowledge that the Association was past its worst financial troubles. That same year saw the appointment of a full-time salaried Secretary in Mr. F. Knight, who joined the staff from that of the Royal College of Veterinary Surgeons. Early in 1931, with a membership of 1,662, an income exceeding £6,000 per annum and investments to the value of £7,575, the Association moved to 2, Verulam Buildings, Gray's Inn, taking over slightly larger chambers. In spite of the "depression" then prevailing, the work of the Association continued to increase and by the year 1937 the staff numbered five, the membership was approaching 2,000 and the income was nearing £8,000, and as the number and membership of Committees, together with their work, had similarly increased, a search for more congenial premises was made. The result was the acquirement of No. 36, Gordon Square, as the Association's house, symbolically adjacent both to the new University buildings and the headquarters of the British Medical Association, and within easy reach of the Royal College of Veterinary Surgeons.

Throughout this long period of transition, the Association has been served by a notable line of Presidents, Secretaries and Treasurers, who have each helped to weld the "National" into a powerful institution, able and willing to speak for all professional interests at home and abroad. Indeed one of the improvements made during recent years has been the careful production and presentation of reports and memoranda dealing with professional topics. Furthermore, since the last war representatives of the Association have with increasing frequency discussed policy affecting the health of animals with Ministries, senior Civil Servants, representatives of other national bodies such as the Milk Marketing Board, the National Farmers' Union, and official committees of enquiry.

In addition to its many scientific reports the Association has taken increasing care with the preparation of evidence to be submitted to official committees of enquiry. Furthermore, effective co-operation has been established with the Parliamentary and Scientific Committee and through them with a large body of Members of Parliament. Thus in a variety of ways the Association has striven to co-ordinate conflicting veterinary opinion, to represent the profession in national and other important councils, to improve the appreciation of the work of the profession by the public, both in town and country, and also in Parliament, and generally to advance the study and application of veterinary science and with it the status of the profession. The Association can certainly claim to have been instrumental in raising since the last war salaries of veterinary officers in the Ministry of Agriculture, in the Colonial service, in municipalities, in agricultural and research institutes. In its increasing intensive work the Association has received the generous support of its officers, its members of Council and Committees, its permanent staff and its growing membership. Its present record of more than 2,800 members is in itself a congratulation upon its past efforts and a hopeful augury for a successful future.

XII—The Charitable Institutions of the Profession

The profession has not been behindhand in organising means for helping the unfortunate. As long ago as 1865 Mr. Ephraim Alfred Friend, who qualified in 1820, and who had already in 1841 proposed the establishment of a mutual defence society (*Veterinarian*, 1841, **14**, 169, 665) again raised the subject, and as a result a Committee was formed resulting in the establishment of the National Veterinary Benevolent and Mutual Defence Society. This Society has always had the strong support of the Lancashire Veterinary Medical Association, of which Friend was an Honorary Associate. It has both a Defence side and a Benevolent side, and provides assistance for necessitous veterinary surgeons, whether members of the Society or not, and their dependants. Grants averaging £1 a week are made to about ten recipients, the total annual expenditure being £423.

The Victoria Veterinary Benevolent Fund was established in 1897 to celebrate the Diamond Jubilee of Queen Victoria. It became an Incorporated Society in 1919, when it received its largest bequest, namely a sum of over £10,000 left by the late Dr. Clement Stephenson, which when invested purchased £13,569 3½ per cent. Conversion Loan.

It has also recently benefited to the extent of £10,195 from the estate of the late F. C. Hunting, son of Wm. Hunting. The accumulated capital of the General Fund is £28,000 and, with the two bequests above mentioned and other trusts, the total capital at the disposal of the Fund is over £57,000—a very creditable sum for a numerically small profession. The total of the annual grants made by this Society to Widows, Orphans and indigent members is over £1,600.

There are two ladies' organisations assisting these Societies, namely, the V.V.B. Fund Ladies' Guild, which owes its establishment to a suggestion put forward by Lt.-Col. P. J. Simpson, and which has representatives in every part of the country. It contributes some £190 a year to the two Funds. A Ladies' Committee working in connection with the Northern Counties Divisions by means of parties and sales of work sends welcome donations to the two Funds, and provides Christmas gifts for local recipients in distressed circumstances.

IN PARLIAMENT

Anglo-American Financial Agreement and British Agriculture

On Thursday last the House of Commons passed the Government motion approving the Anglo-American Financial Agreement. During the vigorous two-day debate, critics expressed misgiving about the future of Imperial preference and the possible repercussions of the terms and conditions of the loan on the prosperity of British agriculture. With regard to the former, Colonel Oliver Stanley reminded the House that whatever Imperial preference might be to this country and the Dominions, to certain of our Colonies that preference was a question of life or death. "It made nonsense of the colonial development plans, published on Friday [see our Notes and News columns.—*Editor*], to say that assistance was going to be given to the Colonies and then take away their means of livelihood."

Mr. Robert Boothby and Squadron Leader Hollis had tabled an amendment (asking the House not to approve the Agreement) which commenced with the statement that a return to the gold standard "would endanger the prosperity of our agriculture and industry and would deprive this country of effective control over the national economy."

Sir John Anderson, early in the debate, raised the question of the position of agriculture under this Agreement, saying that it troubled him—and everyone must know that the future of the industry was a matter which had engaged very serious consideration for some time past. "I have seen statements to the effect that our position in that respect is fully protected," continued Sir John Anderson. "It may be right to say that the declaration goes further

in the direction of recognising the special problems of agriculture, which it may be remembered we discussed to some extent a long time ago in connection with the wheat agreement, than any previous declaration or document issued with the authority of the United States Government. But when it comes to details I suppose that we shall not be bound by every detail that is set out in the declaration. It looks to me as if the right of the participating Governments to impose resrictions for the purpose of protecting home agriculture had been very considerably restricted. Perhaps we can have an explanation on that subject."

Mr. Boothby said that if gold were made a monetary basis, and the basis of credit, as Bretton Woods did, sooner or later it would exercise a contracting influence on the world. He believed it was the greatest obstacle to the one thing which would get the world to its economic goal, which was a continuous policy of economic expansion. We finished the last war a prosperous country, with a prosperous agriculture. It took ten years of deflation to turn it into a really poor country, with a derelict agriculture.

Sir Stafford Cripps (President of the Board of Trade), replying for the Government on the first day, referred to the proposals under the Agreement for the modification of trade restrictions as they concerned agriculture.

"The position as regards agriculture may be summarised in this way," said Sir Stafford: "We shall still continue to be able to utilise, for the purpose of encouraging our agriculture if we desire to do so, the following devices: we can continue tariff protection provided, in the bargaining which goes on, we do not give it away. We can continue in our State trading, through the Ministry of Food when we are bulk purchasing, to have margins on prices we pay which are the same as would be permitted for tariffs; that is to say, we can use State trading just as we could use tariffs for regulating between imported and home goods. Import quotas can continue to be imposed to enforce Government measures to restrict the quantities of like domestic products; that is to say, if we want to limit the quantities of pig meat, or whatever it may be, we can employ a quota for export as well as for home. That gives one a very great power, because it is always possible to put a quota on the home market for almost anything. Fourthly, domestic subsidies are not touched in any way by this document, except where they are on such a large scale that they are affecting international trade. Obviously, as we are not an exporting country in agricultural goods, subsidies that we impose on our own internal production will not affect international trade.

"Those four methods of assistance can be used either separately, or in combination, to achieve the aims of any agricultural policy. There is one other which is of negative assistance as it were; that is, the prohibition of export subsidies on primary products will prevent those products being forced into markets where there are surpluses arising in other countries. In other words, there will be less from which to protect our agriculture if export subsidies cannot be used by other countries and, of course, the same will apply as regards commodity arrangements. . . . No one imagines that this will emerge from an international conference unaltered in many matters of detail. The broad principle of this is that we have these various methods by which we can assess or deal with our agricultural position.

Mr. Hudson: "The really important thing is that the application of this principle should not so fetter our discretion and freedom as to make the policy which was announced by the Minister of Agriculture impossible. That is what seems to me to be the danger."

Sir S. Cripps: "I entirely agree, and that has been examined with extreme care. We are perfectly satisfied, and we would not have agreed to the broad principles of this had we not been satisfied, that with this exception under paragraph (*e*) they will allow us to carry out to the full the agricultural policy which has been announced by the Minister of Agriculture. We have no doubt about that at all. My right hon. Friend will bear in mind that this is not the only exception to one general principle here. There are lots of other ways in which one can act so far as agriculture is concerned. There is the prohibition or quantitative import restrictions. Paragraph (*e*) is merely saying that here are certain exceptions to the general prohibition which is contained in the introductory wording of Section (*c*) and it does not go beyond an exception to that general prohibition. . . . It is for Congress formally to approve or disapprove as the case may be. We are satisfied that these proposals contain nothing that will unduly hamper us in carrying on the domestic policies we desire to carry on in respect of commodities or industry or agriculture."

* * * * *

Colonial Development and Welfare

Last week the Government issued two documents of importance in relation to the future of the Colonial Empire. The more momentous is a circular despatch to the Governors of all British Colonies in which the Colonial Secretary enunciates the principles which are to govern the allocation of the grants made under the Act, passed early this year, which increased the resources of the Colonial Development and Welfare Fund established in 1940, and prolonged its term by a further five years. [The new total sum of £120,000,000 takes the place of the former fixed maximum sum of £5,000,000 in any financial year for development and welfare, and £500,000 for research.] Mr. Hall comments that it is not intended that the total sum shall be taken to indicate the total Colonial need for development expenditure during the next ten years. "The total cost of development that can be embarked upon may be expected to be considerably more than £120,000,000 according to the extent which Colonial Governments can supplement the contemplated grants." The total set aside for centrally provided schemes of research and higher education is £23,500,000; of these schemes, the most important financially is research: provision is made for expenditure on research up to a limit of £1,000,000 a year. It is not intended that all research schemes shall be under direct central control. £11,000,000 has been set aside as reserve, and the remaining total of £85,500,000 is to be allocated between the respective colonies, the sums assigned ranging from £150,000 for the Falkland Islands to £23,000,000 to Nigeria. The plans of the Colonial Governments are to be based on a survey of the whole field of possible development and welfare, and the Secretary of State warns them against bureaucratic planning, inviting them to arouse the interest and secure the co-operation of the peoples concerned, for example, by the setting up of Development Committees, containing unofficial representation, in the Dependencies.

The other document—a White Paper entitled "Inter-territorial Organisation in East Africa" (Colonial No. 191. H.M.S.O., 2d.) puts forward as a basis of discussion proposals for the creation of an East African High Commission consisting of the Governors of Kenya, Uganda and Tanganyika, a central legislature, and an executive organisation supported in appropriate cases by advisory boards. At present the inter-territorial services and functions are loosely organised within the structure of and directed by the Conference of East African Governors, consisting of the Governors of the three territories named, plus those of Northern Rhodesia and Nyasaland, with the British Resident, Zanzibar. The scheme put forward recognises the impracticability of the fusion or federation of the three East African territories, although they form a geographical unit: it therefore restricts the executive to the officials actually administering the common services (which include research, higher education, anti-locust and anti-tsetse services) and defines the competence of the legislature in precise terms. It is proposed that this body should be composed of 12 official and 12 unofficial members with provision for adequate representation of African and Arab interests.

R.C.V.S. MEMBERSHIP EXAMINATIONS

List of Successful Candidates

(Continued)

Liverpool:

First Year:

Brears, W. S.
Horn, B. S.

Second Year:

Aston, K. R.
Carter, N. S.
Fisher, Miss P. M.
Harrison, W. J.
Macdonald, J. N.
Swire, P. W.

Third Year:

Broughton, J. E.
Carus, Alexander
Henderson, Miss Jane
Jones, R. G.
Sumner, G. R. (H)
Walker, R. J. B.
Whittle, W. N.

(H) denotes credit in Hygiene.

Fourth Year:

Arthur, T. H.
Green, L. H.
Johnston, R. M.
Lloyd, W. H. (Paras)
Thompson, R. G.
Williams, C. P.

(Paras) denotes credit in Parasitology.

Final Year:

Chambers, J. R.
Evans, J. R.
Evans, S. D. S.
Hawkins, R. H.
Highet, D. R. (S)
Kidd, John
Robinson, F. E.

(S) denotes credit in Surgery.

Glasgow:

FIRST YEAR:

Aitken, George (C)	Gittleson, M. L.
Archibald, Miss H.	Irvine, A. J.
Beck, Robt.	Ostler, D. C.
Boyd, R. P.	Strang, A. L. D.
Craig, J. H. G.	Taylor, Malcolm
Doak, Miss M.	West, W. R. G. (B)
Doyle, Joseph	Wilson, Miss J. C. S.
Gilchrist, J. A. S. (B)	

(C) denotes credit in Chemistry.
(B) denotes credit in Biology.

SECOND YEAR:

Campbell, Miss D. J.	Lustig, Martin
Ferguson, Wm. (P)	Mair, C. P.
Finkelstein, B. (P)	Paton, I. M.
Goodwin, Robt.	Ritchie, N. D.
Greig, Miss Joan	*Whyte, Miss E. N.
Grisedale, J. A.	

* denotes 2nd class honours.
(P) denotes credit in Physiology.

THIRD YEAR:

Bremner, D. A.	McCulloch, J. L. M.
Bryson, Wm.	Macpherson, L. W.
Crawford, Miss E. T. (A) (H)	Main, Wm.
Douglas, Campbell (P) (H)	Murphy, Miss L. I.
Garven, James	Scott, A. M.
Grossett, A. B.	Wilson, Miss Audrey
Lornie, David	

(P) denotes credit in Pharmacology.
(A) denotes credit in Anatomy.
(H) denotes credit in Hygiene.

FOURTH YEAR:

Dunn, A. M.	Locke, Hugh
Lamond, J. L.	

FINAL YEAR:

Aird, J. S.	McIntee, D. P.
Campbell, D. T. J.	Mitchell, David
Corbett, Miss Betty	Morton, Alex.
Hamilton, Andrew	Peoples, J. F.
Kaushash, N. C.	Pinkney, Miss Jean
Loughlin, James	Provan, J. W.
McDonald, Andrew	Tarver, W. J.

Edinburgh:

FIRST YEAR:

Auchterlonie, David	Henderson, D. C.
Branagan, Denis	Redden, J. H.
Cormack, J. G.	Waterlow, Miss J.
Dick, G. H.	Wood, Colin
Gibb, Alex.	

SECOND YEAR:

Brotherton, P. N.	McCully, W. H.
Copland, Miss E. A.	Miller, A. H.
Fawell, E. V.	Pette, F. D.
Jones, E. E.	Ruddoch, C. P.

THIRD YEAR:

Andrew, Hubert	Price, E. L.
Braithwaite, J. R.	Simms, I. H.
Henderson, G. L. B. (H)	Sziland, G. A. (H)
Kerr, W. J.	Thomas, W. U.
Munro, I. B.	

(H) denotes credit in Hygiene.

FOURTH YEAR:

Clarke, A. V.	Slee, Alan
Hetherton, Colin	Wharton, M. H.
Hunter, T. T.	Wilkinson, Leonard
Morton, P. E.	

FINAL YEAR:

Black, T. S. M.	Potter, Robt.
Brown, D. A.	Russell, A. G. M.
Clyde, D. H.	Shilliday, E. A.
Dudgeon, Alex.	Singleton, W. B.
Niven, M. G.	Steven, H. J.

(To be concluded)

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Good Wishes to all our Readers for Christmas and the New Year

Diary of Events

Jan. 2nd.—N.V.M.A. Committee Meetings: Joint Veterinary Officers and Public Health, 11.30 a.m.; Sub-committee on First-aid Handbook, 1 p.m.; Organising Committee, 4 p.m.

Jan. 3rd.—N.V.M.A. Committee Meetings: Committee on the Re-allocation of the Duties of Committees, 10.30 a.m.; Finance and General Purposes, 12.15 p.m.; Appointments, 4 p.m.

Jan. 3rd.—Meeting of the Central Veterinary Society, Conway Hall, W.C.1, 2 p.m.

Jan. 3rd-4th.—Annual General Meeting of the British Ecological Society at Exeter (Washington Singer Laboratories, Prince of Wales Road)—for programme see Notices column.

Jan. 4th.—Meeting of Council, N.V.M.A., at the Connaught Rooms, Great Queen Street, Kingsway, W.C.2.

Jan. 9th.—R.C.V.S. Committee Meetings.

Jan. 10th.—R.C.V.S. Committee Meetings.

Jan. 11th.—R.C.V.S. Council Meeting.

Jan. 18th.—Annual Meeting of the Mid-West Division, N.V.M.A., at Bristol (Bright's Restaurant, Queen's Road, Clifton), 2.15 p.m.

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Administration of Food and Drugs (Milk and Dairies) Act, 1944

NOTE OF MEETING WITH SIR DONALD VANDEPEER, K.B.E., PERMANENT SECRETARY OF THE MINISTRY OF AGRICULTURE AND FISHERIES

A deputation from the N.V.M.A., led by the President, Mr. G. N. Gould, recently met the Permanent Secretary and other officers of the Ministry of Agriculture and Fisheries, to ascertain the Ministry's intentions as regards methods of implementing the policy laid down in the Food and Drugs (Milk and Dairies) Act, 1944.

The PRESIDENT, in his opening statement, said that he and N.V.M.A. members generally were disturbed to learn, as a result of recent enquiries, that the Ministry's proposals for implementing the White Paper on "Measures to Improve the Quality of the Nation's Milk Supply" were developing on different lines from those envisaged by the Association when they had first welcomed them. Following a discussion with Mr. Johns and Sir Daniel Cabot, he understood that this new work was not to be within the orbit of the Animal Health Division of the Ministry, and that it was intended that the veterinary profession should be an "arm of the service" instead of exercising general supervision over all aspects of milk production, as they had previously been given to expect. He enquired whether there had in fact been such a change of plan, and, if so, whether it had been dictated primarily by the present widely held opinion about the acute shortage of veterinary surgeons. It was true that the profession could not, and would not wish, to undertake all the executive work involved in this new policy, but they had expected that they would play a part of general co-ordination.

Sir DONALD VANDEPEER said that he would not dispute that, since

the proposals were first made, there had been some change of emphasis. The conception at the time when the Act was before Parliament, which had been discussed with the Association, was that the veterinary staff would play a more dominant part in the organisation of the work than was now contemplated. It was, however, at that time very difficult to envisage in detail the system of integrating all the aspects of milk production involved; and developments since 1944 had inclined the Ministry—and the Minister—to think that the set-up for this work should rather be that of parallel services than that one service should play the dominant role. He mentioned two of these factors:—

(*a*) The National Milk Testing Scheme had grown from modest proportions into a widespread service leading to the supervision of various aspects of milk production on farms and throwing much light upon problems of inefficient production.

(*b*) The Milk Marketing Board, which began as a producers' selling organisation, was tending to become much more interested in methods of improving milk production, *e.g.*, by setting up artificial insemination centres and taking over milk recording work. This was an inevitable and a desirable tendency.

As he saw the problem, there were three main aspects of milk production which, though they inter-acted upon one another, could be separately stated:—

(i) The economic efficiency of production—an aspect which the Government considered very important;

(ii) The question of quality production, which involved methods, equipment and buildings as well as animal health questions; and

(iii) The animal health problem proper.

He considered that these problems were too wide in scope and too complex to be embraced entirely by the Animal Health Division of the Ministry and to come under the sole supervision of the veterinary staff. These considerations had led to the setting up of a new Division in the Ministry for livestock improvement and dairy husbandry. It would be a function of this Division to weld together the veterinary aspects of milk production (which were and would continue to be the responsibility of the Animal Health Division) and, *e.g.*, the advisory work which would be carried out on farms under the supervision of the National Advisory Service which was about to be set up (which was the responsibility of the Education and Advisory Services Division). It would obviously be necessary for these and other aspects of milk production policy to be closely integrated, and the Ministry would wish to discuss fully with the Association the best means of accomplishing this; but the Minister was satisfied that on grounds of administrative efficiency, the policy outlined was the right one. While he was concerned in this matter primarily with devising long-term arrangements, in which short-term factors should not be allowed to play an unduly large part, it was, nevertheless, essential in the national interest, and especially in the present condition of short supply of veterinary surgeons, that professional men should be used to the top of their capacity and that any work not requiring all their skill or training should be undertaken by a less, or differently, qualified staff.

In the course of the discussion, Sir Donald Vandepeer repeated the assurance previously given to the Association that veterinary surgeons would not be put under the control of persons less qualified than themselves. He said that it was still not possible to say when the "appointed day" under the Act would be fixed, but that it would be essential for close consultation to take place in the meantime between the Animal Health Division and the veterinary staff on the one hand, and the new Division of the Ministry on the other. He did not think that there was any danger that the administrative arrangements within the Ministry would result in any lack of co-ordination between Divisions or groups of Divisions. That was a problem of a type with which the Ministry was familiar.

In conclusion, Sir Donald Vandepeer referred to the Minister's recent announcement on the Government's policy for ensuring a prosperous and efficient agriculture, and expressed the view that this was the foundation on which the future of the veterinary profession should be built. The importance attached by the Government to the economic efficiency of agriculture generally and the prospect that livestock production would come to take an even larger place than hitherto in our national agricultural production, promise a very wide field for the expansion of veterinary services. There were already a number of schemes designed to improve and increase the production of milk and livestock products through improvements in the health of our herds and flocks, and there was every reason to expect that further large plans would be developed, as circumstances permitted.

Mr. Gould said that he would report back to his Association the expression of the Ministry's views and, while disappointed, he felt that they could not but accept them in the light of the assurances given by Sir Donald Vandepeer that the Association would be consulted throughout regarding the arrangements to be made.

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VACCINATION AGAINST CONTAGIOUS ABORTION

Strain 19 Vaccine

Recommendation Regarding Omission of the Interval Between Vaccination and Bulling

When a live vaccine produced from a field strain of *Br. abortus* was in use, it was necessary to recommend that cows or heifers should not be put to the bull until an interval of two months after vaccination. As a precautionary measure, when S.19 vaccine became available, the recommendation was repeated for that vaccine. There is no evidence, however, that this interval need be maintained. After discussion between the N.V.M.A. and the Ministry of Agriculture, it has been agreed that under the Calfhood Vaccination Scheme and the Scheme for the Control of Diseases of Dairy Cattle, no interval between vaccination and bulling is necessary, so that in future vaccination may be carried out up to the time of bulling.

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PERSONAL

Mr. J. W. McIntosh.—In our issue of November 17th we informed our readers, with deep regret, that Mr. J. W. McIntosh, of Crieff, Hon. Treasurer of the Royal College of Veterinary Surgeons, was lying seriously ill in a nursing home in Edinburgh. We are very glad to be able to state that Mr. McIntosh hopes to return home in time to spend Christmas there and that he is making satisfactory progress. "I was very touched," adds Mr. McIntosh, "with the many expressions of sympathy and goodwill which came from all over the profession, and I would like to thank all, through *The Veterinary Record*, as I cannot reply to them individually."

Veterinary Internationals at Murrayfield

Mr. Michael Steele-Bodger's Rugby "Blue" and "Cap."—A distinction probably unique in veterinary student sporting annals has been gained by Mr. Michael R. Steele-Bodger, son of Mr. H. W. Steele-Bodger, M.R.C.V.S., of Tamworth, in his selection as a member of the England XV to meet the Scots at Murrayfield on January 5th, following the award of a "blue" in consequence of his appearance at Twickenham last week. He was a member of the Cambridge pack which carried off the honours of the day in the first "full" rugby inter-varsity match to be played at Twickenham since December, 1938. The Cambridge XV won a rousing game by 11 points to 8, and, in the words of *The Times* Correspondent, "from start to finish it was largely the efforts of the forwards both in the scrummage and in the loose which confounded the high hopes of Oxford." The occasion was honoured by the presence of the King and Queen, with Princess Elizabeth, and the players were presented to their Majesties.

To revert to the International fixture, we have also to congratulate Mr. David Wallace Deas, M.R.C.V.S., the well-known Heriot forward, who is a member of the Ministry's Sterility Officer's staff, on his selection to represent Scotland at Murrayfield.

R.C.V.S. OBITUARY

Bowett, Thomas, Manor Lodge Farm, Worksop, Notts. Graduated London, July 14th, 1903. Died, suddenly, December 11th, 1945; aged 66 years.

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ADDRESSES OF DISEASE-INFECTED PREMISES

Foot-and-Mouth Disease:

Essex.—The Abattoir, Colchester, Essex (Dec. 15th); Coneybyes Farm, West Bergholt, Essex (Dec. 16th).

Hants.—Butts Lane Allotments, Castle Lane, Throop, Bournemouth, Hants. (Dec. 15th).

Swine Fever:

Derbyshire.—Spancarr Farm, Ashover, Chesterfield, Derbyshire (Dec. 14th).

Hunts.—Bedford Barns Farm, Farcet Fen, and 21, Church Street, Stranground, Peterborough, Northants (Dec. 11th).

Lincs. (*Kesteven*).—West End Farm, Helpringham, Sleaford, Lincs. (Dec. 13th).

Lincs. (*Holland*).—Six Score Farm, Deeping Fen, Deeping St. Nicholas, Spalding, Lincs. (Dec. 14th).

Lincs. (*Lindsey*).—The Common, Wainfleet All Saints, Skegness, Lincs. (Dec. 15th).

Northants (*Isle of Ely*).—Lattersey Hill, Whittlesey, Peterborough (Dec. 12th).

Somerset.—Manor Farm, Norton Fitzwarren, Taunton, Somerset (Dec. 12th).

Staffs.—Belcher's Piggeries, Boulton Road, West Bromwich, Staffs.

Warwicks.—5, Lower Quinton, Stratford-on-Avon, Warwicks (Dec. 11th).
(Dec. 15th).

Sheep Scab:

Derbyshire.—Booth Farm, Kinder, Hayfield, Stockport, Cheshire (Dec. 13th); Hillside Farm, Chunal, Glossop, Derbyshire (Dec. 13th); Highlow Hall, Highlow, Hathersage, Sheffield, Yorks. (Dec. 13th).

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UNIVERSITY OF EDINBURGH DEGREES

At the Graduation Ceremony of the University of Edinburgh held on December 14th, the following former students of the Royal (Dick) Veterinary College had Degrees conferred:—

D.Sc. in Veterinary Science.—William MacGregor Henderson (Thesis: The Quantitative Study of Foot-and-Mouth Disease Virus).

B.Sc. in Veterinary Science.—Peter Thoseby Preston.

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THE AGRICULTURAL ADVISORY SERVICE: A FARMING COMMENT

The structure of the new Service, to be established in October, which was intimated in our columns last week, is greeted with many reservations by the Agricultural Press. *The Farmers' Weekly*, for example, comments: "And there is just one other doubt about the new service—a doubt which will probably be resolved in time. That is the position of the veterinary surgeon under the new dispensation.

"After all, we are told that our future lies in livestock. You would think, therefore, that the veterinary surgeons would loom large in the advisory service. In fact, at a quick guess, you'd have said that it would be the veterinary surgeon's job to co-ordinate all the livestock end of the job, breeding, feeding, clean milk, etc., as well as the specialist job of animal health.

"Let us hope we won't find ourselves with too many specialists and not enough all-round men who can add up the whole problem for us."

* * * * *

DEATH OF PROFESSOR GUSTAVE BARRIER

Le Recueil de Médecine Vétérinaire has announced the death of Professor Gustave Barrier, of Paris, in his 92nd year. He graduated from l'Ecole Nationale Vétérinaire d'Alfort in 1875 and in the same year was appointed to the chair of anatomy, succeeding Professor Goubaud, who had held that post for almost 30 years. In 1878 he went to the veterinary school at Toulouse to take the chair of natural history and materia medica. The following year he returned to Alfort to take charge of the teaching of anatomy, histology and the exterior of domestic animals. With Professor Goubaud he collaborated in writing "The Exterior of the Horse," which was translated into English by the late Dr. Simon J. J. Harger, then professor of anatomy in the Veterinary School of the University of Pennsylvania.

Professor Barrier became director of the veterinary school at Alfort in 1900. In 1911 he succeeded Professor Chauveau as inspector general of veterinary schools in France. During his long career as a teacher, writer, statesman and worker in the field of public health, he received many honours and was elected to membership in many scientific societies at home and abroad.

DOCTORS AND NATIONAL HEALTH SERVICE

Statement of "Essential Principles"

A statement of the principles which it considers to be essential to any National Health Service was issued on Thursday of last week by the Negotiating Committee of the Medical Profession. The statement declared:—

For a quarter of a century the medical profession has stressed the need for a complete health service. The profession is willing and anxious to co-operate with the Government in evolving this service, for it believes that the knowledge and experience of the profession are indispensable contributions to its success. It re-emphasises that good housing, social, economic and environmental circumstances are the principal factors in the maintenance of health and the prevention of disease. It urges the expansion of medical research. In the interests both of the public and of medicine, the profession regards the acceptance of the following principles as essential:—

1.—The medical profession is, in the public interest, opposed to any form of service which leads directly or indirectly to the profession as a whole becoming full-time salaried servants of the State or local authorities.

2.—The medical profession should remain free to exercise the art and science of medicine according to its traditions, standards and knowledge, the individual doctor retaining full responsibility for the care of the patient, freedom of judgment, action, speech and publication, without interference in his professional work.

3.—The citizen should be free to choose or change his or her family doctor, to choose, in consultation with his family doctor, the hospital at which he should be treated, and free to decide whether he avails himself of the public service or obtains the medical service he needs independently.

4.—Doctors should, like other workers, be free to choose the form, place and type of work they prefer without Governmental or other direction.

5.—Every registered medical practitioner should be entitled as a right to participate in the public service.

6.—The hospital service should be planned over natural hospital areas centred on universities in order that these centres of education and research may influence the whole service.

7.—There should be adequate representation of the medical profession on all administrative bodies associated with the new service in order that doctors may make their contribution to the efficiency of the service.

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THE MASTITIS PROBLEM IN THE UNITED STATES*

Bovine mastitis is becoming more prevalent year by year. Its economic importance to the dairy industry, both to the herd owner and the processor, cannot be over-emphasised. From the standpoint of many it is the most important disease of the modern dairy cow.

More and more in the future an effective plan of control will be demanded by the herd owners, processors and public health officials. The role of the practising veterinarian in mastitis is an important one—but if success is to be obtained his part will be but one of many. Many others will have to work diligently and with full co-operation if successful control measures are to be instituted.

There are several factors which will have to be investigated further, and perhaps our ideas will have to be changed before large-scale control programmes such as are being tried in Illinois will become effective.

1. An evaluation of the true importance of the role of bacteria, trauma, feeding and environment as regards the mastitis syndrome will have to be made. Some are of the opinion that *Streptococcus agalactiae* is the primary cause and that if eliminated from udders mastitis is not likely to occur. Others believe that this organism is almost a normal habitant of the bovine udder and that trauma and improper feeding are the primary causes for clinical flare-ups. These various factors must be placed in their proper niche as concerns their true importance in mastitis, if control measures are to be worked out which are satisfactory.

2. There must be an agreement on methods of diagnosis. Laboratories differ somewhat in their opinions as to the efficacy of various diagnostic tests. At the present time there are some who advocate the necessity of using eight or nine tests to arrive at an accurate diagnosis. This difficulty must be straightened out in the future.

3. More attention should be paid in the laboratory to the diagnosis of bacterial infections other than the common *Streptococcus agalactiae* as these "unusual" cases are the most troublesome to the practitioner.

4. Further research is needed as regards drugs and methods of treatment. At present, the consensus is that sulphanilamide in oil is the choice in lactating cows, with tyrothricin second. For dry cows, tyrothricin and colloidal silver oxide are recommended, with the silver being the most effective but also the most dangerous because of its severe irritating properties.

5. Sanitation still must be stressed as the No. 1 item on any control programme. The need for constant efforts along educational lines must be emphasised. During the past year in Illinois there has been much activity along these lines, but the job has been merely

* Report of the Special Committee on Mastitis to the 63rd Annual Meeting of the Illinois Veterinary Medical Association, Springfield, January 18th-19th, 1945.

started. A great deal of harm has resulted from literature sent to the dairyman advertising various "cures." This literature invariably makes exaggerated claims for its product and tends to implant in the herd owner's mind the fact that sanitary measures are secondary.

6. An effort should be made to get the various groups which are interested in dairy husbandry to co-operate more fully in an educational programme directed toward sanitation and mastitis control. The job of education that needs to be done is too big for any one group to handle. We have had it brought to our attention every day that, as practitioners, we cannot accomplish it alone. Certainly we cannot be called incompetent if we solicit the aid of various dairy processors and their associations, of milking equipment manufacturers and health officials in order to put over the point of sanitation.

7. It is believed that feeding cows concentrated feeds, to push milk production beyond reasonable limits, is often an important factor in producing clinical mastitis. This practice should be discouraged and the dairyman shown where feeding for moderate production may be in effect feeding for more production in the long run.

8. Inasmuch as fast milking minimises the chances for bruising of the udder during the milking process and is conducive to more milk per year per cow, this method of milking should be stressed as very important in any mastitis control programme.

9. It is recommended that quarter samples be drawn in routine diagnostic procedures and that only infected quarters be treated, particularly in lactating cows. This method enables the veterinarian to check more closely on the results of his treatment, eliminates the questionable practice of risking the introduction of infection into a clean quarter and reduces materially the cost of treatment to the dairyman.

10. This committee is of the opinion that any control programme, such as is being conducted on a statewide basis in Illinois, should entrust the matter of treatment to the local veterinarian. Lactating cows should be treated if the local practitioner deems it advisable, and the drugs used should be of his choosing.

Mastitis can be controlled. The job is a big one—but it can be done. But it never will be done by the veterinarian alone. It will take not only our concentrated efforts, but also the co-operation of everyone interested in the dairy industry—right down to the hired man who milks the cow.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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"HYPOCALCAEMIA IN THE MARE"

Sir,—I wish to thank Mr. Hodgkinson for his letter appearing in your issue of the 1st inst.

From analogy it is probable that hypocalcaemia was present in the cases under discussion and the intention of my letter of November 10th was not to question this but to try to find out if there was any evidence in favour of a hypothesis that such conditions are primarily due to an allergic disturbance to which hypocalcaemia is secondary. Mr. Hodgkinson's observation that his patient had been feeding on relatively poor pasture does not give apparent support to this hypothesis; on the other hand the mare was in good condition and a good doer.

The fact that a similar attack did not occur on previous occasions, when the mare referred to lost her foal, could be explained on the assumption that the mare was not, on these former occasions, in a sensitised and shockable state and under such circumstances anxiety by itself would not precipitate an allergic reaction.

In a paper (*Vet. J.*, **97**, 366) I made reference to records of cases apparently similar to those under discussion. One specially interesting reference was to the observations made by the late W. L. Williams, that in the year 1889, when he had seven cases in rapid succession, favourable weather during the season had furnished luxuriant pasture. Williams' cases occurred in mares in high condition and of mature age, but not old, and it is interesting to note that the two present cases were both in ten-year-old mares.

Yours faithfully,

Compton, Berks. A. Brownlee.

December 15th, 1945.

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OESTROGEN INDUCTION OF LACTATION IN CATTLE

Sir,—The letter by Dr. A. S. Parkes and Mr. R. E. Glover in last week's *Veterinary Record* raises the question of the relative efficacy, for the artificial induction of lactation in maiden heifers, of various methods of administration of synthetic oestrogens. It hardly seems correct to say, as they do, that a peak yield of 13 lb. daily is as much as could reasonably be expected from an immature animal of the type used in their experiments on the injection of diethylstilboestrol esters, since of 32 Ayrshire heifers of comparable age used by Folley and Malpress (*J. Endocrinol.*, **4**, 23, 1945) in experiments on the oral administration of synthetic oestrogens, seven gave peak yields of over 10 lb. daily, the highest being 19 lb. daily and the next 16¾ lb. The six best yields (to the nearest ¼ lb.) obtained by Parkes and Glover (*J. Endocrinol.*, **4**, 90, 1945) by single injections of esters of diethylstilboestrol were 13½, 12½, 9½, 8¼, 7¼, 6¼, while the corresponding figures for the above-mentioned experiments on oral administration were 19, 16¾, 12½, 11¼, 11¼, 11.

Parkes and Glover (*J. Endocrinol.*, **4**, 90, 1945) in commenting on the results of Folley and Malpress state that oral administration is not very effective. Nevertheless, as pointed out by Cowie (*Vet. Rec.*, **57**, 17, 1945), a careful study of the published evidence would indicate that administration of synthetic oestrogen by the oral route is (differences in dosage apart) at least as effective as the administration of mixtures of esters by subcutaneous injection. In any event, in view of what is known of the considerable individual variation in response of heifers to synthetic oestrogen however administered, Parkes and Glover (*J. Endocrinol.*, **4**, 90, 1945) would hardly seem to be on safe ground in concluding from the result of an experiment on one animal that the injection of a combination of esters is as efficacious for the induction of lactation as the tablet implantation method.

Yours faithfully,

S. J. Folley.
A. T. Cowie.

National Institute for Research in Dairying,
Shinfield, Berks.
December 15th, 1945.

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LITERATURE OF VETERINARY RADIOLOGY

Sir,—Following upon my protest, which you were good enough to publish in your issue of August 4th, I have now received from the publishers of Schnelle's book an explanation which I am authorised to publish, and which reads as follows: "'Radiology in Canine Practice' by Schnelle was produced under handicaps which were due to war-time conditions. When Dr. Schnelle read the copy of the foreword by Dr. Sosman, in part quoted by Major Kirk, he placed the same interpretation upon it as did the editors and publishers of the book in question: that it was not intended to signify that there were no references whatever in English on the subject, but instead, that no volume on the subject had been published in the English language. There was no intention on the part of the author or of the publishers to ignore the 70 pages which were entirely devoted to radiology of the dog and cat which appeared in the original edition of 'Index of Diagnosis—Clinical and Radiological' by Hamilton Kirk. It is hoped that this reply to Major Kirk's letter of protest will inform all who are interested regarding the motives of author (Schnelle) and the publishers of his work on 'Radiology in Canine Practice.'" (Signed J. V. Lacroix.)

I am pleased to have this assurance that there was no intention to mislead, and yet it still seems difficult to reconcile the passage in his letter ("that it was not intended to signify that there were no references whatever in English on the subject") with the following passage in Dr. Sosman's foreword: "Dr. Schnelle's is the first text-book in the English language on the subject of veterinary radiology. That alone has made the compilation and preparation of material more difficult, *as there are no references to consult and no similar work for comparison.*" (My italics.)

Dr. Schnelle, at least, knew there was such a work for comparison, as he had previously written in praise of my own. Further, it is not quite true to speak of only 70 pages of my book being devoted to radiology, as there are repeated references to the subject *throughout* its 600 pages. In addition, no less than 135 of its illustrations are radiographs or concerned with radiography; so this should have constituted an excellent work of reference.

In accepting Dr. Lacroix's well-intentioned explanation with thanks, I would only add that if there is question of establishing priority, let us at least be correct and consistent in our statements.

Yours faithfully,

"Crovland," 658, Finchley Road, Hamilton Kirk.
Golders Green, N.W.11.
December 12th, 1945.

Advertisers' Announcement

Christmas Holiday Arrangements.—Burroughs Wellcome & Co. announce that their offices at 12 Red Lion Square, W.C.1, and at 183-193 Euston Road, N.W.1, will be closed from 12.30 p.m. on Saturday, December 22nd, to 9 a.m. on Thursday, December 27th. An emergency staff will be on duty at 12 Red Lion Square, from 9 a.m. to 4 p.m. on Monday, December 24th, to deal with urgent orders.